The Builder.

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ILLUSTRATIONS.

"Le Nid."—Mr. M. H. Baillie Scott, Architect ..... *Double-Page Ink-Photo.*
Additions to Soot Pray Farm, Worplesdon.—Mr. Leonard Stokes, F.R.I.B.A., Architect ..... *Double-Page Photo-Litho.*
Artistic Decorations of the Paris Mairies :—
"La Peinture," Marble Statue.—By M. Levasseur ..... } *Two Single-Page Tone-Blocks.*
"Plafond Allégorique."—By M. D. Maillart ..... }
"Sacrifice à la Patrie."—By M. Moreau de Tours ..... }
"Plafond Allégorique."—By M. Henri Lévy ..... } *Double-Page Tone-Block.*
"L'Enfance."—By M. Emile Lévy ..... }

CONTENTS.

Artistic Decorations of the Paris Mairies 455
Notes 457
Fulham Public Baths and Wash-houses Competition 459
The Egypt Exploration Fund 459
The Architectural Association 460
The London County Council 465
Competitions 465
Architectural Societies 465
Applications under the London Building Act, 1894 465
Illustrations :—
Interior: "Le Nid." 466
Soot Pray Farm, Worplesdon, Surrey 466
Artistic Decoration of the Paris Mairies 466
The Surveyors' Institution 466
Model Artisans' Dwellings, Shoreditch 468
Tribunal of Appeal 469
Books Received 469
Correspondence :—
Modern Brasses 469
Competition for Public Offices, &c., Lymm 469
A Question of Fixtures 469
The Student's Column. Roads: Their Construction and Maintenance.—21. Conditions of Wear of Broken Stone Roads .. 469
Obituary 471
General Building News 471
Sanitary and Engineering News 472
Foreign 472
Miscellaneous 472
Capital and Labour 473
Legal :—
Kensington Building Dispute 474
What is a New Street? 474
Case Under the Workmen's Compensation Act, 1897 474
Case under the Building Act 474
Meetings 474
Prices Current of Materials 474
Recent Patents 475
Some Recent Sales of Property 475
Tenders 476

Artistic Decorations of the Paris Mairies.

SOME years ago we published a description of the old Hôtel de Ville of Paris, destroyed by fire in 1871, and of the new building which replaced it,* and the decoration of which, though commenced in 1889, is not yet completed. As a sequel to this subject, and to complete the review of the artistic treatment of the municipal buildings of Paris, we propose to give some account of the district "Mairies" or town halls of the French capital, most of which contain works of art which are of interest and are in many cases little known.

Since 1859, the date at which the provincial communes were annexed to the capital, Paris has been divided into twenty *arrondissements*, each one of which has its own Mairie at which all the events in civic life are registered—births, marriages, deaths, military conscriptions, the results of elections, &c.; and which includes also a court of justice, a charity office ("Bureau de Bienfaisance"), and a police depôt. These buildings have become of more and more importance during the last twenty years, and the Municipal Council has spent over their decoration the greater part of the funds available by its Fine Art Committee.

To comprehend the administrative division of Paris into its twenty arrondissements, we must imagine a spiral having its origin in the centre of the ancient city, at the Palais Royal and the Louvre, and which is unrolled in an enlarging curve on the two banks of the Seine, ending on the right bank, eastwards, at Ménilmontant and Charonne. This spiral includes fourteen arrondissements on the right bank of the river and six on the left.

Following this order, we commence with the Mairie of the Ist Arrondissement, situated on the Place du Louvre, and in designing which it was thought necessary that it should have some architectural relation with the church of Saint Germain on the same site. This church (the one from which the tocsin of the massacre of St. Bartholomew was sounded), is in the Gothic style; and Hittorff, the architect of the Mairie, considered that he met the case by designing a building in which Gothic detail was combined with Renaissance. It is said that, in order to render the two architectural monuments the more symmetrical in appearance, Haussmann, who was then in power, caused the ancient church to undergo a drastic process of scraping and renovating. Since that time, the church and the Mairie have been united by a Gothic arcade, interrupted by a tower designed by Ballu in the style of fifteenth century.

This Mairie is a pretentious erection, with its square porch forming a terrace and surmounted by a gable flanked by turrets decorated with figures of "Bienfaisance" and "Justice," the work respectively of Travaux and Aimé Millet. A statue of "Loi," by M. Crauk, adorns the apex of the gable, beneath which is a large rose window. The "Salle des Mariages," which alone presents anything of artistic interest, was decorated some years ago with three large paintings by M. Besnard, symbolising the Spring, the Summer, and the Winter of Life; a fine work, especially the third section, representing an aged couple, hand in hand, contemplating the starry sky, is particularly. A monumental chimney-piece, sculptured with caryatides by Klagmann, a bust of The Republic in marble by Jules Thomas, and one of Jean Goujon by Iselin, complete the decoration of this Mairie, which dates from 1859.

The Mairie of the IInd Arrondissement is situated in the Rue de la Banque. It was built about 1846 from the designs of Alphonse Girard. The façade, extremely simple in its lines, presented formerly some curious subjects symbolical of civic life, incised in the surface after the Egyptian manner; these have now been obliterated, and are no great loss. In the Salle des Mariages M. Moreau de Tours, a pupil of Cabanel, has painted, in the Classic formula of his master, three compositions of a fine style in their way, where figures of ancient Gauls, labourers and warriors, are grouped into compositions symbolising "Marriage," "The Family," and "Sacrifice for One's Country"; of the latter we give an illustration.*

The Mairie of the IIIrd Arrondissement, facing the Square du Temple, which gives it a framework of foliage, was commenced in 1864 by Victor Caillat, and completed three years afterwards by Eugène Chat. The centre portion is surmounted by a clock turret with a curved pediment supported by two seated figures, the work of Pascal, and representing Commerce and Industry. Three allegorical bas-reliefs by Lagrange—"Le Vote," "La Naissance" and "La Mort," decorate the vault of a staircase leading to a large vestibule, in which M. Diogène Maillart has painted two ceiling pictures, of one of which we give an illustration, representing "The City of Paris instructing her Children" (the instruction seems to be of a rather *laissez-faire* order), while in the other a number of figures are grouped which have reference to the principal industries of the district—silversmiths' and bronze work. In the Salle des Mariages the walls decorated with garlands show also an allegorical painting of "Loi," by Sirony. A picture by M. Félix Barrias, representing "Charity," surmounts the mantel-piece of the Salle des Fêtes.

The IVth Arrondissement, that of the Hôtel de Ville, possesses a very large Mairie, the principal façade of which fronts the Place Baudoyer. This building, heavy in aspect and of poor style, was designed by Bailly, and dates from 1862-67. Externally, on the front towards the Rue de Rivoli, there are some decorative *motifs* in the shape of shields, laurels, lances, balances of Justice &c. In the Salle des Mariages is a fine painting by M. Cormon, divided into four subjects, representing "Birth," "Marriage," "Death" and "War." The large Salle des Fêtes, 130 ft. long, was adorned, before the Commune fires, with splendid carved woodwork, and Aubusson tapestries after cartoons by Mazerolle, which were all destroyed. It presents to-day a series of allegorical paintings executed by M. Comerre, the result of a competition, symbolising the Seasons, the Elements, Day and Night, Fortune, Abundance, Destiny, and the Study of Science and Literature. Here again we find the influence of the cold, correct, and mannered style of Cabanel, of whom M. Comerre was the favourite pupil.

We now pass to the left bank and into the Quartier Latin. Here we find the Mairie of the Vth Arrondissement placed symmetrically at the angle of the Rue Soufflot, and

* See the *Builder* of January 26 and April 20, 1889.

* See separate plates in this issue.

forming a pendant to the Ecole de Droit, the Ionic order of which it reproduces. It was built by Victor Caillat in 1849. Some busts by Maindron and Etex, and a rather poor "Ville de Paris" statue by Soldi, are its only decorations.

The Mairie of the VIth Arrondissement is on the Place St. Sulpice, and dates from 1848. It was the work of the architects Rolland and Levicomte. A graceful group, "Jeune Mère," executed in stone by M. Alfred Lenoir, decorates the main staircase. In the large Salle des Fêtes, added in 1888, M. Henri Lévy has painted three ceiling pictures of allegorical subjects. In one "Equality Presides at the Accomplishment of Civic Duties;" in the second "The City of Paris offers to Liberty the sacrifice of children slain in fighting for her;" in the third, "Fraternity extinguishes Hate and leads Peace to dwell with men." Of the second subject we give an illustration.

We are now in the Faubourg St. Germain. In the Rue de Grenelle, adjoining the Ministry of Public Instruction, two monumental gateways, flanked by Corinthian columns and adorned with garlands, arabesques, and figures of genii, give access to the courtyard of the former Hôtel Forbin-Janson, where the Mairie of the VIIth Arrondissement was installed in 1861. The architect, M. Uchard, preserved the existing rooms of this aristocratic dwelling-house as much unaltered as possible. One of them, transformed into the Salle des Mariages, is wainscotted in the lower portion with woodwork painted white and relieved with gilding, in Louis Seize style. Above this M. Emile Lévy has painted three graceful compositions, representing "The Proposal," "The Celebration of Marriage," and "The Family." These, which are treated purposely in a rather archaic style, were executed in 1878. The room contains a fine mantel-piece of green marble adorned with palms in gilt bronze. In a neighbouring room the pretty decorative fancy of Vanchelet, consisting of a series of female figures connected by garlands of flowers, remains untouched, as well as the gilded wood-carving where garlands, arabesques, winged figures, and fantastic animals make up a rich decoration. In a small room adjoining, also lined with carved woodwork, are some sea pieces above the doorways to which no name is attached, but which may almost certainly be attributed to Joseph Vernet.

The enlarging curve of our spiral now brings us again to the right bank, into the VIIIth Arrondissement, the Mairie of which is in the Rue d'Anjou St. Honoré, in the former Hôtel de Contades, a cold and heavy-looking building devoid of ornament, and offering no attraction. Fortunately also it is insufficient for the increasing demands of the district, and will before long be superseded by a new one to be erected on a site in the Square La Borde.

It is also into an old mansion of the aristocracy, the Hôtel Aguado, in the Rue Drouot, that the Mairie of the IXth Arrondissement was transferred in 1849. A little known sculptor, M. Lambert, has presented a mediocre bronze statue of Voltaire as a young man, which stands in the courtyard; and on the main staircase there were placed, a few years ago, four statues representing Eloquence, Painting, Music, and Sculpture, the work respectively of MM. Desca, Levasseur, Louis-Noël, and Allouard. We give an illustration of M. Levasseur's fine and spirited, figure "La Peinture." To these have been added the busts of General Foy, Paul Delaroche, Méhul, and Pigalle, all of whom lived in this quarter of Paris.

The new Mairie of the Xth Arrondissement is barely completed, though we were able to give, in our issue of April 11, 1896, an illustration from a photograph of the completed exterior. M. Rouyer is the architect, and it is intended that it should be decorated externally with some high-class sculpture, as soon as the Municipality has funds at liberty for this purpose. For the moment this Mairie contains, as its only artistic decoration, a plaster model of Dalou's Triumph of the Republic.

The Mairie of the XIth Arrondissement is the work of the late architect Gaucel, who completed it in 1865. The principal façade, on the Place Voltaire, is ornamented with six figures of children seated on the extrados of the triangular pediments over the windows of the first story; these are the work of M. Maniglier, who also executed the caryatides at the base of the campanile. The decoration of the Salle des Fêtes has recently been undertaken by M. Victor Prouvé, who hopes to complete it in the course of next year.

The decorations for the Salle des Fêtes of the Mairie of the XIIth Arrondissement are also in hand, by M. Carrière, and will be seen in the special pavilion of the Paris Municipality in the great exhibition next year. This Mairie, which dates from 1877, was designed by the late M. Hénard. It presents, towards the Square Daumesnil, a graceful façade in stone and brick, in the early French Renaissance style. In the midst of the foliage of the square appears the entrance porch of the Mairie, decorated with two statues by MM. Henri Plé and Lequieu, personifying two industries connected with the district, the Bercy wine trade and the ebony work of the Faubourg St. Antoine. M. Oudiné has sculptured on the keystone of the entrance arch a head representing the City of Paris. A ceiling painting by M. Thirion, over the main staircase, illustrates by a series of figures "Instruction," "L'Assistance Publique," and the Industries of the district. The room on the first floor, which M. Carrière is to decorate, is lined with oak woodwork.

The Mairie of the XIIIth Arrondissement brings us back again to the left bank, and into the Gobelins quarter, where the Bièvre still runs, between the tanneries and mills, its muddy and evil-smelling stream. The Mairie, of a very simple architecture, was in process of building from 1867 to 1877, on the Place d'Italie, from the designs of Bonnet. In the entrance vestibule is a fine bronze vase modelled by M. Léon Chédeville. M. Lematte, the painter who has decorated the principle staircase, has amused himself by painting an Arcadian scene with shepherds living in the open air, a subject which has no relation certainly to the life and conditions of the district. Perhaps that was the reason he wished to suggest a more beautiful form and circumstance of life to them.

M. Gustave Boulanger, who has painted the Salle des Mariages, though by sympathy and education a purely "Classic" painter, seems in this case to have felt the necessity of bringing his academical learning into some relation with the facts of modern life, and his paintings symbolising "Marriage," "Paternity," "Patriotism," and "The Mutual Obligations of Married Persons" at all events present no difficulty of interpretation. The first of these paintings shows an interesting point. In imitation of some of the Renaissance painters, the artist has grouped here, in antique costumes, the portraits of a certain number of well-known modern men. Among them we find his own portrait, that of Bonnet the architect, and those of Alfred Arago, Poilpot, Eugène Guillaume, Cabanel, Alexandre Dumas *fils*, and Charles Garnier. The Salle des Fêtes, which has only recently been built, is to be decorated with two large Gobelins tapestries of which we have already spoken, and for which M. Jean Paul Laurens is to make the cartoons. In one of these the glory of French industry is to be symbolised by a kind of apotheosis of Colbert. In the other will be represented the thinkers and philosophers of Port Royal.

The Mairie of the XIVth Arrondissement, commenced in 1891 and finished in 1898, is situated in the Square de Montrouge, its principal façade being surmounted by a campanile the four angles of which are decorated with statues in stone, by M. H. Chevalier, representing "Acts of Civic Life." In the Salle des Mariages are three large paintings by M. Maurice Chabas, representing in a manner extremely modern and perhaps somewhat trivial, an "Idylle Parisienne," a wedding breakfast, and "Les Joies de la Famille."

The Mairie of the XVth Arrondissement is also decorated, in the Salle des Mariages, with paintings of an ultra-modern spirit, by M. Humbert and M. Lagarde, the result of a competition. Notwithstanding the admitted talent of the artists, these productions are very poor in a decorative sense, the result of a false æsthetic judgment of which the Hôtel de Ville itself presents unfortunately only too many examples. They are in fact merely *genre* paintings on a large scale; and one of the subjects, "En Temps de Guerre," by M. Humbert, which recalls the horrors of the Siege of Paris, seems strangely out of place in a "Salle des Mariages." The building itself, built in 1875 from the designs of M. Devrez, has its principal façade, extremely simple in style and treatment, fronting the Rue Péclet.

The Mairie of the XVIth Arrondissement is, from an architectural and decorative point of view, one of the richest in Paris. It was built from the designs of Godebeuf in 1875-77, and shows an imposing façade, in a severe style of architecture, towards the Avenue Henri Martin. The principal staircase, as well as the Salle des Mariages, is decorated with ornaments in the Pompeian style, interspersed with decorative landscapes in tapestry, by M. Chauvin, nephew and pupil of Duban. The mantelpiece in the Salle des Mariages is surmounted by a bas-relief in marble by M. Hector Lemaire, symbolising "L'Hymenée." In a semi-circular room *en suite* with the Salle des Fêtes are six paintings by M. Emile Lévy, having for subjects "Infancy," "Youth," "Middle Age," "Glory," "The Family," and "Old Age." They are in a graceful quasi-archaic style, perhaps a little too "pretty," and hardly equal to those by the same artist in the Mairie of the VIIth Arrondissement. We give an illustration of the first of the set—"L'Enfance."

The Mairie of the XVIIth Arrondissement,

in the Rue des Batignolles, dates from the time when this district was outside the municipal boundary of Paris, and is at present quite inadequate to its purpose. As it is intended to erect a new one shortly on another site, we need only remark here that the existing one was built in 1847-49, from the designs of Lequeux *père*, and that on the main staircase is a figure of "The Revolution" by Rapety, the result of a competition opened on the eve of the Revolution of 1848, and in which M. Gérôme obtained the first premium. His picture, "Le Péché de Jeunesse," is at present at the Hôtel de Ville, in the Salle de Budget.

The Mairie of the XVIIIth Arrondissement has for its sole decoration two groups in stone by M. Crauk, attached to the entrance porch, and representing "L'Assistance Publique" and "Le Devoir Militaire." The building was commenced in 1888 from the designs of the late M. Varcollier, and completed by his son and by M. Claës. It is situated in the Rue Ordener, on the north slope of Montmartre Hill. There is some talk, in the Municipal Council, of entrusting the decoration of the Salle des Fêtes to a group of painters who are natives of the Montmartre district, of whom the best known is M. Willette, the caricaturist, who has already shown a considerable talent for decorative painting of a bright and facile style.

When, in 1879, the Municipal Council of Paris, in its rooted dislike to the Institute and the classic formulas of the Ecole de Rome, resolved to substitute public competition for official commissions, the Mairie of the XIXth Arrondissement, then just completed from the designs of M. Davioud, was selected as the field for this new experiment. M. Gervex and M. Blanchon, who gained the first competition, accordingly sacrificed with ardour to the reigning taste of the day; and thus, in the Salle des Mariages of an essentially artisan district, we have an immense composition in which, amid an array of brilliant toilettes and military uniforms, a Mayor, draped with a tricoloured scarf, joins the hands of two young people dressed as if they had stepped out of a fashion plate. It required all the talent of M. Gervex to save his work from ridicule. It is true that a little further on, in the same room, one sees the figure of a dock labourer, grimy and half-naked, lifting a sack of charcoal, and that another picture, with a melancholy realism, prefigures to the young bridal party, in advance, the condition of things which ends in a visit to the "Bureau de Bienfaisance"! With a good deal less talent, M. Blanchon depicts a Night School, a Declaration at the Registry of Births, and a Scene in the Cattle Market, where the drovers in long blue blouses make an odd pendant to M. Gervex's club-men. The latter artist has also painted here a ceiling, harmonious enough in colour, representing the industries of La Villette, the principal subject being a scene in an abattoir! A bust in marble of The Republic, by M. Lormier, completes the decoration of this apartment. The building itself, facing the Place Armand Carrel, shows a pleasing and well composed façade. Two niches, on the first floor level, contain statues by M. G. Clère and the late M. Croisy.

If, thanks to the competition system, MM. Gervex and Blanchon could freely, and even with exaggeration, do practical homage to the preconceived ideas on decoration of some members of the Municipal Council, the same system a few years later conducted M. Glaize to a totally opposite result in the decoration of the Mairie of the XXth Arrondissement. Having to decorate the Salle des Fêtes, he treated the subjects of "Marriage," "The Family," and "Work," in the most pronounced style of pure Classicism. Then, in two immense compositions he depicted "The Triumph of the Republic" and "The Great Men of the Revolution"; the whole in a most pretentious and theatrical manner. The building, on the Place Gambetta, was in process of construction from 1868 to 1877, from the designs of Salleron. It is, architecturally, in a simple and unpretentious style, and has the merit of being very conveniently planned.

In considering the Mairies of Paris from an architectural point of view, one cannot but recognise that, with the exception of those which are ancient private mansions converted to this use, they present a great monotony of style and architectural treatment. The new Mairie of the Xth Arrondissement is a happy exception, a design marked both by originality and artistic feeling, and reminding one of the admirable design, on a larger scale, which its architect produced in 1872 in the competition for the rebuilding of the Hôtel de Ville.

The artistic decorations present a great deal of variety, and a good deal of genuine effort to produce interesting work, which has not been unsuccessful. In spite of the shortcomings or eccentricities which we have noticed in our review, they form an important contribution to modern French art, and they have had the effect, in most cases, of inducing painters to make a serious effort to bring their art into closer relation with the spirit and circumstances of modern life; either employing allegory of the Classic school to symbolise modern facts, or going directly to subjects of modern life treated in a more or less decorative manner. This new manner of regarding decorative painting roused a good deal of opposition and criticism, some of it not uncalled for, some of it exaggerated. There have been some failures and mistakes, no doubt, but nevertheless the large amount of earnest and sincere work carried out in decorating the municipal buildings of Paris has done a great deal to open out a new field and new prospects for Decorative Art.

NOTES.

The Housing Question.

THE question of the housing of the working classes was discussed by Lord Rosebery a few days ago in a suggestive, or rather a hopeless, speech. He suggested that local bodies might purchase land at some little distance from London and build thereon workmen's dwellings, but he proceeded then to point out the difficulties of the scheme. He suggested measures dealing with sham landlords, and wound up by advising local electors to choose thoroughly honest men as their local representatives for the purpose of local business. The speech was remarkable, for it emphasised the great importance of the subject and the difficulty of dealing with it. No doubt re-housing and the destruction of insanitary areas is necessary, but the more the subject is considered the clearer does it become that prevention rather than cure is required. In other words, respectable, decent, well-educated, self-respecting people do not live in slums; they may dwell in as small a habitation as you like, but it will be clean, and healthy; it will be a true home. The problem is thus one rather of persons than houses. It will not be necessary to remove slums if they are not inhabited; the owners can build better houses for better people. The sanitary officer can prevent overcrowding; good inspection can see that houses are healthy. Prevention, we repeat, would save the necessity of many cures or attempted cures.

The L.C.C. and the Gas Companies.

SOME time ago the London County Council decided to promote in the next Session of Parliament a Bill to enable the Council to prosecute the metropolitan gas companies upon the evidence of tests made with the portable photometer, in places other than the official testing stations. At its meeting on Tuesday last the Council decided to instruct its Parliamentary Committee to include in this same Bill provisions to carry into effect the recommendation of the Select Committee of the House of Commons for the regulation of the charges of the metropolitan gas companies with regard to gas supplied through automatic meters. The Council's solicitor considers that it is doubtful whether the Council have power to spend money in providing a Bill to give effect to the recommendation of the Select Committee; hence the decision to include the two subjects in one Bill. But whereas the gas companies will probably be quite willing to agree to any reasonable regulations that may be suggested, to comply with the very proper recommendation of the Select Committee, they will, we do not doubt, fight desperately, and in all probability successfully, against the official recognition of the portable photometer; and the Bill may in consequence be altogether rejected. We have in former issues pointed out the absurdity of attempting to make the gas companies resposible for the condition of gas in the consumers' fittings, over which the companies have at present no control.

Flats are not Houses.

A DECISION of Mr. Justice Farwell which was given last week is likely to have important consequences. It was proposed to erect flats on some property in Kensington, and it was objected by the freeholder that this was a breach of covenant. It is unnecessary to go through the conveyancing steps which produced this litigation; the simple question was whether a covenant to build on a plot of ground one messuage or dwelling-house was violated if a flat were built on it. The Judge decided that it would be, for a structure which contained a number of flats was not a single dwelling-house. The decision is of importance, since there must be a great deal of land in London in regard to which restrictive covenants have been entered into long before residential flats came into vogue. Such covenants, while they lessen the value of plots to which they refer, increase the value of those which adjoin them.

Trolley Wires and Fire Risks.

THE Fire Insurance Companies are viewing with some alarm the rapid growth of Electric Tramways in this country. We have received from the Royal Insurance Company, Liverpool, a pamphlet setting forth the risks run in towns which adopt the overhead trolley system from the breaking of telephone or telegraph wires. In this case the broken wire often comes into contact with the high-pressure wire, notwithstanding the so-called guard wires, and if the proper precautions have not been adopted by the telephone company the results may be disastrous. A year and a half ago a telephone wire falling on to a tramway wire in Zurich led the high-pressure current into the telephone exchange, and originated a fire which burnt down the building. The damage done was over 50,000*l*. Six months later an exactly similar accident occurred in Vienna, and the central exchange there had a narrow escape from being burnt down. Several fires, also from this cause, have originated in private houses which have telephone or telegraph wires attached to them. Seeing that the risk run is a real one, and that the cost of making the telephone service fireproof is very small, we welcome this little pamphlet, and recommend it to the attention of householders in towns which have adopted, or which are about to adopt, an overhead system of electric traction. The main remedy seems to be to put two fusible cut-outs with long breaks in the telephone circuit, just as if the telephone were an electric lamp. By this means the risk of fire is entirely eliminated at a trifling cost. Warnings are also given as to the way a high tension wire should be supported from a building. If a gas-pipe, for example, be near the support, a spark caused by a lightning discharge might start an arc to it and the pipe melting the gas might be ignited. Electricians are thoroughly aware of these dangers, and know how to guard against them; and as no one but a competent electrician would superintend the erection of a trolley wire, the advice given under the heading "lightning" is perhaps superfluous.

Corporation Telephones.

A FEW weeks ago, when the law relating to municipal telephones was finally published, we anticipated that a new profession of consulting telephone engineers would arise. Since then the new profession has been born. From a contemporary devoted to the discussion of municipal affairs we take the following advertisement, inserted by a past-president of the Institution of Electrical Engineers:—

"*The Future of the Telephone.*—Local Authorities and others interested in the development of Local Telephone Exchanges can obtain information on the Legal, Engineering, and Commercial aspects of the question from," &c.

We know that the question of telephony is being taken up enthusiastically by several corporations. We are afraid that there is a tendency to consider that this question comes under the province of the municipal electrical engineer. Fortunately, in most cases, he is aware that a certain amount of practical experience in the management of a telephone exchange, and of the vagaries of telephone clients, is necessary before he can advise his corporation whether to take up telephony or not. In a few cases, however, rashness and ignorance may lead to failures, which will be widely advertised by the many enemies of municipal enterprise. We were glad to notice from a circular letter recently sent by the Secretary of the Post Office to the Vestries and District Boards in the county of London, that the National Telephone Company cannot lay telephone pipes and wires under the streets of London, even with the consent of the local authorities, unless they have also obtained the authority of the County Council and the Postmaster-General. The streets of the Metropolis should only be disturbed when absolutely necessary, and the treble check, even if unfair to the company (seeing that the Post Office is a possible competitor), is necessary for the good of the community.

Egyptian Porcelain.

DID the ancient Egyptians know how to manufacture true porcelain? Brongniart considers that they did not, and that such porcelain as has been found in Egypt is of Chinese origin. M. Le Chatelier, however, in a paper recently publised in *Comptes Rendus*, states that he has recently examined a fragment of a funeral statuette found at Saggarah (Memphis), which he regards as true porcelain, and which, from the hieroglyphics upon it, he believes to be of Egyptian manufacture. The material examined was hard and translucent, and of a pale blue colour. Its composition was found to be:—Sodium oxide, 5·8; copper oxide, 1·7; lime, 2·1; alumina, 1·4; iron oxide, 0·4; silica, 88·6 per cent. The composition of Chinese porcelain differs from this materially, and M. Le Chatelier found that although he was able to prepare a paste which yielded a porcelain which exactly resembled this Egyptian porcelain, yet the moist paste, owing to the small proportion of clay it contained, had so little plasticity that it was really only suitable for modelling such objects as compact statuettes.

St. John's College Oxford.

NEARLY twenty years ago an extension of the college buildings, with a central embattled tower, was begun on the north side. It has at length been completed, by Messrs. Castle & Son, with the erection of six sets of students' rooms and an enlargement of the common-room at the north end of the chapel. The kitchen, and the chambers over the old common-room, were built in 1613; the chapel, consecrated in 1530 and restored in 1843 by Blore, who inserted the fan tracery ceiling, belonged to the Cistercian College of St. Bernard, founded in 1436-7 by Archbishop Chichele. After the Dissolution, the monastery buildings were purchased (1557) by Sir Thomas White for his new foundation.

The London School Board Exhibition.

AT the Examination Hall, Victoria Embankment, on Wednesday, Lord Reay opened the annual exhibition of drawings, modelling, woodwork, wood carving, metal work, kindergarten work, needlework, dress-making, cookery, and laundry work executed by the children in the London Board Schools. In opening the proceedings Lord Reay pointed out that the annual exhibitions were valuable, not merely that the ratepayers may see what is being done by the School Board, but to allow experts to compare the work done at the various schools. He said the present exhibition was the best that had taken place, and some of the work was so good that it was to be sent to the Paris Exhibition next year, and that they had nothing to fear from any comparison with the French and German schools. Certainly the exhibition is remarkable for its extent and the special branches of education that are allowed so freely to develop under the individuality of the teachers. The art productions of the children from the ordinary schools and art centres have attained a high level, and it is difficult to believe that they are the work of children. The results are obtained by the excellence of the methods employed to train the children in hand and eye, from their earliest days, at the Kindergarten; and it is here that they receive their first lessons in modelling from nature—flowers and fruit—brushwork and imaginative design. Drawing and modelling from copies seem to be abandoned in the art sections, giving place to nature, models, and still life. The most successful things in the exhibition are the modelling exhibits under the teaching of Miss Esther M. Moore, at the Sherbrook-road School. In this section, the West Lambeth centre also shows good work. Mantua-street School shows a progressive series of brushwork, taking the pupils from the form of the brush to the more elaborate brush forms, in designs from a flower to fill circular, square, or oblong panels. There is some good stencil work for friezes and other purposes, but of course there are degrees of quality. Without remarking specially on the other branches of work exhibited, it is interesting to notice that the training of the eye for appreciating form by the elementary modelling and drawing classes has a visible effect upon the quality of the later work done in the manual classes, such as joinery and wood carving.

Mr. Finn's Drawings of Architecture.

AT the Modern Gallery there is on view a collection of large water-colour drawings by Mr. Herbert J. Finn, dealing almost entirely with architectural subjects taken from Oxford and Canterbury. In the pictorial treatment of architecture, the question always comes in—are we to seek for pictorial effect mainly, or for the adequate representation of the architecture as such. Generally speaking, the one of these two aims is sacrificed to the other. Mr. Finn appears to have aimed at keeping both objects in view, but not quite successfully; his large and boldly executed drawings give the general effect of the buildings in a striking manner, but to the eye of the architect they rather fail in conveying the constructional element in the buildings, or the texture of masonry. In the drawing of Magdalen Tower, for instance (4), though the general effect is fine, the tower seems wanting in solidity; and this is the case also with a good many of the Canterbury drawings. In the west end view of Canterbury (29) the striking contrast, seen in the building, between the rugged and weather-stained masonry of the central tower and the whiter and comparatively smoothed-out effect of the much restored western towers, is lost sight of, and hardly seems to have struck the artist; but to the architect it is one of the points in the character of the building which at once attracts notice. The most successful of the drawings, in combining architectural with picturesque effect, is that of St. Mary's Porch, Oxford (15) with the tower and spire in the background; here the detail is well indicated, and what we may call

the tumultuous effect of the florid architecture of the porch is very well conveyed. Mr. Finn's style really, however, suits much better the representation of actual ruins than of complete architecture, as is seen in his effective view of the ruins of the Bishop's Palace at St. David's (40). Three or four landscapes which are added to the collection —"Cloud Shadows over the Sea," "Harlech Sands" (a very fine sketch), and "Dawn," a seapiece, seem to us to indicate that this artist's powers lie, after all, more in pure landscape than in architectural subjects, which in fact he treats (for architects) rather too much in the spirit of a landscape-painter.

The New English Art Club.

THE exhibition of the New English Art Club, at the Dudley Gallery, though some of the larger works show the kind of extravagance of roughness and "splash" which we are accustomed to here, contains a good many interesting studies of landscape effect, some of these being among the smaller and more sketchy of the works exhibited. Mr. Brabazon's little sketch "On the Riviera" (10) is an admirable bit of colour effect; the companion work, "Isola Bella," (26) is marred by the absurd ghost of a tower just indicated in the foreground, as if it had been half smeared out again —a very easy way of dealing with the details of a scene. Architecture is for the most part badly treated in the exhibition; Mr. Bauer's "Interior of Westminster Abbey" (16) is just a big scrawl; Mr. Thomson's "Durham" (60) is nothing but a silhouette against a very heavily loaded sky; his other Durham view (112), with the white bridge in the foreground, is effective as a picture. In Mr. MacColl's "Marble Hill House" (67) the house is all crooked—an unpardonable sin in introducing buildings into a picture. A very small drawing of the "Ponte Rialto" (31), by Mr. Stabb, deserves attention; it is a fine architectural view on a small scale, and finished like a miniature. In "The River" (74) Miss Alice Fanner does not produce the same effect which she did in her windy landscapes with trees blowing about, in former exhibitions; for so clever an artist the picture is disappointing. Among other things which may be especially mentioned are Mr. James's "Ariculas" (15), a brilliant flower sketch; Mr. Alfred Thornton's "Magadino—Lago Maggiore" (54); Mr. W. W. Russell's "The Bower" (55), a brilliant effect of foliage and sunshine; Miss Ethel Walker's "Angela" (81), a figure of a girl in a sumptuous evening dress leaning against a chimney-piece; Miss Christian's "The Pond" (85), in a broad style but raw in tone, reminding one of Maris with the colour taken out; Professor Brown's "Over the Valley" (102), in which the deep blue of the water in the foreground is a fine point, and is in fact the making of the picture; Mr. Hugh Carter's woman and children under the title "Tired Out" (105); Professor Brown's "The Bather's Pool" (119), a fine rich scene of water and wood; Mr. Henry's "Harvest Time, Walmer" (127), notable for a fine sky; Mr. Shannon's portrait of M. Legros (126), in which however little is visible except the face; Mr. Priestman's "September Storm" (130), a fine landscape effect somewhat spoiled by a very bad horse in the foreground; and Mr. Reid's "Tranquility" (140), with a pond foreground and a lawn and a belt of dark trees behind. Mr. Furse's "Design for a Spandrel in the Liverpool Town Hall" (97), which hangs at the top of the room, is unsuitable for its object, since it is not truly decorative either in colour or design.

FULHAM PUBLIC BATHS AND WASH-HOUSES COMPETITION.

AN interesting collection of drawings submitted in this competition is being exhibited during this week daily from ten to four (Saturday ten to two) at the Fulham Town Hall, Walham Green.

The problem which the competitors had to solve has been beset with difficulties on account of the nature of the site. This extends from Melmoth-place to Hartismere-road, and is about 600 ft. deep and 80 ft. wide in the part available for the building. Fronting Melmoth-place, however, there is a frontage of about 130 ft. of comparatively small depth. The crux of the problem has lain in the desirability of reserving part of this frontage for shops, and whilst some of the competitors on the one hand have taken up too much of this frontage with the approaches to the baths, others have restricted themselves to an unwise degree in their attempt to get in as much shop frontage as possible.

In the first premiated design, by Mr. H. Dighton Pearson, 42 ft. of the frontage is utilised for the approaches to the baths, and the accommodation for bathers is included within the narrow site of the width, as already mentioned, of 80 ft. In this arrangement has been found the happy mean between the extremes into which many other competitors have fallen. The chief excellence of this plan lies in the manner in which the approaches for the various classes of bathers are managed. Fronting Melmoth-place is the superintendent's office, with pay-box behind, the men's entrance being on one side and women's entrance on the other. After passing the pay-box there is a hall for each sex, with a good, well-lighted refreshment-room; and from the hall are separate doors for the two classes (first and second) of each sex; thus the lengthy corridors which are absolutely necessary in such a site are not used in common by the various classes of bathers. Another feature in this plan is the relative position of the accommodation for the various classes. The first-class women are nearest the entrance, next the second-class women, then the first-class men, whilst the second-class men have the longest amount of corridor to traverse. Each class also passes the entrance to its slipper baths before reaching its swimming bath. The accommodation provided is for ten first-class women's slipper baths and fifteen second-class; a women's swimming bath, with pond 60 ft. by 20 ft., and thirty-one boxes; eighteen first-class and forty-one second-class slipper baths for men; a first-class swimming bath for men, with pond 100 ft. by 30 ft., and seventy boxes; and a second-class swimming bath, 125 ft. by 33 ft. 4 in., with 121 boxes. Two club-rooms are provided, and also a small club-room, which may be utilised for female performers.

In this selected design the first-class men's swimming bath is the one to which a gallery has been arranged, and which is intended for entertainments. A moderate provision of douche baths is given for each swimming bath, and the establishment laundry is on the ground floor. The washhouses are entered from Hartismere-road. This design owes its position to the attainment of the happy medium between extravagance and meanness; at the same time, it is one of the most economical in first cost and in maintenance.

The second premiated design, by Mr. H. Druery, takes up 72 ft. of the frontage for the baths, the superintendent's office and pay office having each an outlook on to Melmoth-place, and the refreshment room being behind the pay office. In this design the slipper baths are principally in the front portion of the site, and the swimming baths at the rear. The arrangement of the corridors is not so successful as in the first premiated design, inasmuch as the classes use the corridors in common for the approach to their baths. One club-room is provided with an opening to both baths, the gallery is given to the first class men's swimming bath, the douche rooms are more numerous and ample than in the first premiated design, and the second-class men's swimming bath has also more dressing boxes —150, the additional number being obtained by placing them three deep on one side by means of an annexe. As in the first premiated design, the board-room, ante-room, and superintendent's quarters are arranged on upper floors over the front approach to the baths.

The third premiated design, by Mr. T. W. Aldwinckle, uses only 52 ft. frontage for the approach. The refreshment room is smaller than in the first and second premiated designs, whilst the slipper baths are arranged in rather straggling groups; the ladies' swimming bath is in the front, and men's first and second swimming baths behind. The number of dressing boxes in the swimming baths is in excess of those in the first premiated design, but less than are provided in the second premiated design. The establishment laundry in this plan is on the ground floor, as in the first premiated design, that in the second being on the basement, together with the boilerhouse.

It is not necessary to comment upon the designs of the elevations, as these are quite small; the drawings being made to the scale of 20 ft. to the inch. The plan, therefore, has been of primary importance, but whereas Mr. Aldwinckle shows a complete design for the baths and shops in his frontage to Melmoth-place, the other premiated competitors have confined themselves to the elevation of the bath buildings. In each of the premiated designs details to large scale are given, showing fittings to dressing-boxes, &c., and the engineering arrangements are adequately and clearly shown.

A description of the remaining drawings is difficult, from the peculiar system of arrangement or lack of system, in the disposition of the drawings, the strainers all being numbered by separate numbers, and no attempt having been made to properly display or show the drawings. Nos. 45 and 46 show a good plan, somewhat deficient in shop accommodation, and with the second-class men's swimming-bath made the more important, having the necessary provision for entertainments. Judging from the line taken by the successful competitors, this appears to have been a mistake; as, although the second-class swimming-bath is the larger, the first-class bath could probably be more readily spared. Nos. 51 to 54 also show a good plan, but hampered by the entrance to the washhouses being in Melmoth-place. Nos. 10 to 12 is a good example of a type of plan which several competitors have adopted, that of an inner quadrangle, with arcade or roadway entrance from the frontage, thus providing the maximum of space for shop-front, but apparently, in this instance, making too much effacement of the baths. Matters of opinion, in which the author of this plan differs from the successful competitors, are the arrangement of women's swimming-bath for first-class bathers instead of second, and the arrangement of second-class swimming-bath, with gallery for entertainment.

Nos. 68 to 70 show another plan utilising the quadrangle arrangement, and in this instance a very compact plan results.

No. 75 also follows the quadrangle arrangement, but takes up too much frontage; the plan, nevertheless, possesses many good points.

Nos. 63 to 65 show a plan with happy internal effects; but too much frontage is taken up, and the plan is rather too grandiose in its approaches.

Nos. 1 and 2 and Nos. 8 and 9 are also worthy of mention, although not perhaps quite equal to the premiated designs.

THE EGYPT EXPLORATION FUND.

THE thirteenth annual general meeting of the Egypt Exploration Fund was held on Friday afternoon last week in the Hall of the Zoological Society, Hanover-square, Sir John Evans, F.R.S., President, in the chair.

Mr. H. A. Grueber, Hon. Treasurer, submitted his report. The Exploration Fund showed an expenditure of 365*l.* in excess of receipts; the Archæological Survey Fund showed a balance of 180*l.* on the right side, and the Græco-Roman Branch was more prosperous still, the balance being 291*l.*, which, added to former balance, gave a balance of 1,003*l.* in hand. The Deir-el-Bahari Restoration Fund showed a balance of 214*l.*

Mr. D. G. Hogarth, of the British School at Athens, moved the adoption of the Report and balance-sheet. The deficit of 365*l.* was due to

the extension of the work of the Fund, and, in his opinion, the report was highly satisfactory. The society was to be congratulated on the approaching completion of the work at Deir-el-Bahari. When that had taken place they would have to enter upon the work of resisting the ever-growing process of destruction in Egypt.

The motion, having been seconded, was agreed to.

Mr. J. S. Cotton, Honorary Secretary, in his report referred to the assistance which had come from the affiliated branches at New York, Chicago, and Philadelphia, and the smaller branches at Pittsburgh, Detroit, and Boston, which assistance was recognised by grants of antiquities to the local museums of those branches. The Fund had sent out last season no less than four parties to Egypt. Professor Petrie had continued his work of survey and excavation between Dendereh and Hu, the latter being the site of the ancient Diospolis Parva. It was hoped that Professor Petrie would be able to start shortly for Abydos, the concession of which had been granted him, and where enough of great importance remained to occupy him probably for several years. At Deir-el-Bahari the artists of the Fund (Mr. Howard Carter and Mr. C. Sillem) had finally completed the sculptures of the Great Temple. At the same time Mr. Carter, under the supervision of Mr. Somers Clarke, commenced the necessary task of protecting from damage the buildings and sculptures which M. Naville's excavations had laid bare. Unfortunately, Mr. Carter would soon leave them, having been offered the appointment of Inspector of Antiquities under the Egyptian Government. As to the Archæological Survey, Mr. F. Ll. Griffith, the superintendent, had reported that the first part of the programme was to complete the collection of hieroglyphic signs in the *mastaba* of Ptahhetep at Saqqareh, to re-examine the tomb, to ascertain its plan, and note such portions of the beautiful work as had been inadequately rendered in previous publications, as well as to copy any further sculptures that might exist in the tomb. Much excavation was necessary; and it revealed not only a complicated plan but also two new chambers covered with sculpture, much of which was of equal beauty with the celebrated work in the previously known chamber. The careful copying of this newly-discovered sculpture—some 650 square feet in all—occupied many weeks. The excavation and planning of the *mastaba*, its re-interment at the conclusion of the work, and the unexpectedly heavy task of copying the new sculptures occupied Mr. N. de G. Davies, who represented the Survey in Egypt till the end of the season, so that the second part of the programme, which was to have been carried out in Middle Egypt, could not be undertaken. A short tour of inspection up the river was all for which there was time. The coming season of the Survey would be a short one in Egypt, as they wished to push on with arrears of publication. The survey of the old kingdom tombs of Middle Egypt would be completed. For the Græco-Roman Branch, Mr. B. P. Grenfell and Mr. A. S. Hunt went out to the Fayüm and spent three months excavating on the edge of the desert. Their chief result was to identify Greek sites of great importance for ancient geography.

The Chairman next addressed the meeting, referring in sympathetic terms to the death of Sir John Fowler, who for eleven years was his predecessor in the chair, and who was not only an eminent engineer but a devoted Egyptologist. The main sphere of the society's action would, in the coming year, be in the neighbourhood of Abydos, where a considerable area had been granted by the Egyptian Government. It was hoped that by these investigations not only would their knowledge of the predynastic occupants of Egypt be largely increased but that remains dating from the early and Middle Empires might also be discovered. From whatever cause it might have arisen, the fall of nine columns of the great hall at Karnak could not but produce a feeling of distress in their minds; and this feeling was rather intensified at this disaster having so rapidly supervened on the skilful and successful restoration of one of the leaning columns by M. Legrain. For the safety of the rest of the building, the reconstruction of the fallen portion might be found imperative; but if so, whence were the necessary funds for the purpose to be obtained?

In the absence of Professor Petrie through ill-health, an address which he had prepared on his work at Dendereh was read by the honorary secretary. Professor Petrie's paper dealt principally with the results of his excavations at Abadiyeh, near the great cemetery of Semaineh, and afterwards at Hu, the ancient Diospolis. Altogether about 1,250 graves of the prehistoric age, and about as many historic graves, mainly about the Twelfth Dynasty, were opened and recorded. From the order of the graves as found by the pottery, Professor Petrie obtained the history of the development of stone vases, ivory, and the working of flint and metal, for even the earliest of the tombs contained copper. A new piece of history became apparent in the great change that passed over every kind of work at one point of the scale, about a quarter through the prehistoric age. A new tribe seemed to have come in with very different notions. One of the most curious differences was that the older people largely used signs which were the forerunners of the Mediterranean alphabets, while the later people ignored such signs. The earlier people used no amulets, while the later used amulets and also forehead pendants and face veils. The characteristic pottery of the earlier people was closely like the Kabyle pottery at present; the later people had some pottery almost identical with that of South Palestine in historic times. The cemeteries of the Sixth to the Twelfth Dynasties had given the history of alabaster vases and beads, and those of the Thirteenth to the Seventeenth Dynasties had shown the development of pottery as yet unknown. If every 500*l.* spent in excavating cleared up as much history as this, they would soon cry out for more ages to unveil. In conclusion, Professor Petrie dealt with the work of the future, and said that at Abydos, which, despite all that had been ravished from it, was the most important site for history, they must hope to connect together firmly the prehistoric sequence that had now been established on to the beginning of historic times.

A vote of thanks to the President, proposed by Judge Baylis and seconded by Mr. Percival, concluded the proceedings.

THE ARCHITECTURAL ASSOCIATION:

MARBLE.

An ordinary fortnightly meeting of the Architectural Association was held on Friday last week in the Meeting room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, W., the President, Mr. G. H. Fellowes Prynne, occupying the chair.

The minutes of the last meeting having been read and confirmed, the following gentlemen were elected members of the Association, viz., Messrs. C. Thunder, H. B. Squire, W. A. Scott, W. H. E. Roberts, E. D. Nixon, T. J. Müntzer, J. A. Hossack, E. Gunn, M. J. Dawson, H. H. Dawson, H. P. Carter, C. T. E. C. Brooks, E. E. Bowden, and E. G. Allen.

Messrs. A. H. Hart and H. A. Satchell, who, in accordance with the standing orders, had resigned their seats on the Committee, as they had been appointed to a paid office (lectureship), were then re-elected members of the committee.

The late Sir Arthur Blomfield and Sir T. N. Deane.

The Chairman said it was with much sorrow he had to refer to the death of Sir Arthur Blomfield—an old member and past-President of the Association. Sir Arthur had always taken an interest in the Association, and his loss would be felt by them all. He desired to move a vote of condolence with the widow and family of the deceased.

This having been agreed to, the Chairman also moved that a vote of condolence be passed to the family of the late Sir Thomas N. Deane, of Dublin. He was very well known in the profession, and deep sympathy would be felt for his relatives at their loss.

Mr. G. B. Carvill, Hon. Secretary, stated that Mr. Gerald Moira was down to read a paper on "Colour Decoration in Relief" on December 15, but unfortunately he would not be able to do so on that date; Mr. Andrew Oliver, however, had kindly consented to read a paper on the occasion on "Streets and Buildings of Old London," with lantern views.

It was also announced that the Discussion Section would hold a meeting on the 17th inst., when Mr. Williams would read a paper on "Tenement Houses for the Working Classes."

Mr. W. Brindley then read the following paper on "Marble":—

In architecture, the word marble conveys the idea of a stone of more importance than an ordinary building material. It is a stone, always possessed of some special beauty, either in texture, colour, or both, and of sufficient hardness to take a polish. The varieties are almost infinite, and, numerous as they are, it is rare that any two quarries are precisely the same; there is always an individuality of some sort or other.

We have marbles of one uniform colour, as white, black, grey, red, yellow, green, and so on; but in all cases, even in whites and blacks, there are differences. The whites of Carrara, Italy, differ from those of Greece, Spain, and America. The blacks of Belgium are not the same as those of England and Ireland. The serpentines of the Lizard, Cornwall, differ from those of Banff, in Scotland, and Anglesea, and further vary from those of the Continent and America. These variations are not to be wondered at, when for a moment we study their origin, and the different changes they have gone through as part of the earth's crust. Their ages are equally wide, some being, comparatively speaking, recent, while others are old, and some very old. The white crystalline marbles are now conclusively proved to be nothing more than ordinary sedimentary limestone rocks, like our chalk cliffs, or carboniferous rocks, which have gone through a process of cooking or baking under great pressure, while being hermetically sealed by overlaying rocks, which have kept in the gases, causing the limestone rock to crystallise and alter its nature to that extent that rarely any of the fossils are now discernible; in short, a new rock is produced. There are other whites that have been produced by hot springs carrying in solution a large quantity of lime and silica, which deposits directly the carbonic acid gas is liberated in the atmosphere, often producing a rock of the purest whiteness, or coloured by any metal that the hot water may pass through.

Black marble is a sedimentary limestone coloured by carbon, which colour is immediately destroyed by heat, producing the whitest of lime oxide. We get black marbles with white veins; these white veins are usually younger than the rock itself, being infillings of the cracks produced by different causes in the history of the rock. These remarks about black rocks apply equally to red and yellow ones.

Another class of marble, the Breccias, have gone through all sorts of nature's changes and disturbances; they are rocks that have been broken into irregular fragments, and been cemented together again by nature, and after that in some cases have gone through a baking process and the like.

Nearly all our green marbles are earlier rocks that have been altered, and in some instances been broken up and re-cemented, like Verde Antico. The greens are nearly all magnesia, while the whites in the same mass are lime; occasionally we get both white and green magnesia in the same mass. This slight geological introduction will prove to you that, as marbles are produced under such varying conditions, the quality must be equally various, both in hardness and durability.

Again, some marbles, like the Purbeck, are not much more than tremendously compressed mud and fossils, others are only baked compressed clays. When used in damp situations, these often go back to their original elements, and it further happens that a marble that behaves fairly well in Italy frequently will not stand at all with us. And there are marbles that, like building stones, have to be placed on their natural bed.

Most marbles will stand in isolated shafts, or engaged pilasters, but experience shows us that only a very limited number used as slabs for wall linings can resist the moisture of a newly-built wall. The destructive power of this moisture, be it hydraulic or chemical, is such that it very shortly destroys the face of many marbles; all those of a slatey or sedimentary nature, when face-bedded, go directly; for instance, the Swiss Cipollino, but if cut across the bed this stands fairly well. Then again, certain marbles, like Purbeck, Emperor's Red, and Verona, which consist chiefly of flattish fossil shells, when face-bedded on damp walls become pitted with small holes, while across the bed they stand all right; nearly all this class of fossil marble is only obtainable in thin beds, so a large slab has to be face-bedded. These same remarks apply to certain red marbles found

near Carrara, which are red clays compressed and baked by the same heat that has produced the crystalline whites.

When the Greeks used marble in architecture it was always treated as an ordinary building stone, no attempt was made to save material, everything was massive, and the blocks were ground or rubbed together until the whole structure was next to homogeneous, without the aid of mortar or cement. Their columns, as you are aware, were built with thick drums ; these blocks were worked roughly in the quarries, with projecting bosses on the sides, to which, most probably, were attached some wooden arms to enable the blocks to be revolved forwards and backwards, on the wooden centres, until the two faces came together with an almost invisible joint. When built the whole column mass was skilfully masoned into a pillar with all the Greek subtlety of diminishing entasis, and delicate flutings. This work, had it not been for earthquakes, and the ravages of man, would have been perfect now.

Those who have not seen the Acropolis of Athens can scarcely realise the beauty of this immense marble pile ; the sublimity of colour is in harmony with the subtlety of form. It is not the cold blue white marble of Italy, so common with us, but a translucent warm ivory tint, becoming often ochre yellow ; this deep colour, which is only surface, is usually attributed to great age, but this is not correct, as is proved by the colouring of recent fractures on the Parthenon, and by modern buildings in Athens, a good example of which is a high slab plinth round the Royal Palace. This marble is already nearly as yellow as the Parthenon. The marble contains minute crystals of iron pyrites, the decomposition of which colours the marble a yellow ochre. In the Greek temples of Delphi, Sicily, and Pompeii the common worked stone was plastered over with a marble-like stucco, which is thought to be marble dust with lime and albumen. I think now, from what I saw recently in Greece, that it may be white crystalline marble not quite burnt through into lime ; this I saw being finely crushed with rollers by horse power for plaster work.

Early Quarrying.

There is no doubt the Greek methods of quarrying became the Roman, and it is impossible to imagine that the Greek could have quarried better than what we find now remaining of Roman work, and this not only in the white quarries of Pentelicus, but in the various coloured quarries found in many of the Greek islands. These old Roman workings you can always tell at a glance by the carefully tooled upright face of the rock. I saw lately in an old quarry on the island of Scyros an axed face some 60 ft. high. Although the Romans took over all the Greek white quarries, they were not content with this, but opened quarries of choice colour, wherever they could be found, and these they worked for monoliths to embellish their buildings in Rome and colonial cities. The Roman method of quarrying monoliths for shafts and architraves was by working them *in situ* engaged to the parent rock, either horizontal or vertical, according to the bedding and the solidity of rock. In the Verde Antico quarries the upright large semicircular hollows remain, showing where Justinian obtained the great columns for St. Sophia, Constantinople.

Sarcophagi were quarried by being worked all round, engaged to the rock at the bottom ; they were then wedged off.

In the old Carystian quarries of Cipollino, there are many examples of both finished and unfinished work *in situ*. In one quarry some two thousand feet up the very steep mountain side of "Ocha," on a shelving mass of rock overhanging an awful precipice, are eight columns, 39 ft. long, beautifully wrought, with entasis and top and bottom members quite finished and ready to be fixed, probably in the portico of a temple like that of Antonius and Faustine in the Forum of Rome ; one of them is only a few feet off the sloping edge of the precipice. How they contemplated getting them away is and must, I fear, ever remain a mystery. In addition to these finished columns, there are several of similar size, partially wrought, engaged to the horizontal face of the rock ; other immense masses were stept and partly worked for various purposes.

White Marble.

Roughly speaking, perhaps, three-fourths of the white marble used in the world at the present day comes from the Carrara district of Italy. The marble mountains extend some twelve miles ; they consist of mountain peaks going up to an altitude of 6,000 ft. The sides of these mountains are scored with valleys and ravines which have only three outlets—Carrara, Massa, and Seravezza. On the sides of these valleys are the different quarries, of which there are some 600, "producing annually about 200,000 tons." The water coming from these ravines turns innumerable sawing mills, which slab annually some 60,000 tons of marble. The towns are full of workshops and studios. The marble businesses support in the district some 10,000 people. Any young man who likes mountain scenery, with picturesque sketching and architecture, cannot find a hunting-ground anywhere to surpass this. He will find beautiful Byzantine, Mediæval, and Renaissance work in marble that cannot be surpassed, or rarely equalled, even in Italy. It was the land of the Medici, the playground of Michelangelo and Donatello. I believe a young man could spend a month, pay his fare from London and back, hotel accommodation, including food and Chiante wine *ad libitum*, for less than it would cost at an English seaside town. He would also pick up a little Italian. Nearly all the best statuary of the world is quarried at Mont Altissimo, Seravezza, near Carrara. This is the famous H-marked statuary of commerce, H being for Heuraux, the proprietor. In Italy there are also old white quarries near the coast not far from Grosetta, between Pisa and Rome. The Cathedral of Milan was built from quarries above Baveno.

Spain has several extensive deposits of white marble. The best is the one the Moors used at the Alhambra, the quarries of which I visited some years ago ; they are at Macael, between Lorca and Baza. There is good white marble in Trazos Montes, Portugal, where an enterprising company ten years ago quarried £20,000 worth without any prospect of getting the blocks away, and there they are now. France has some white marbles, but there is little demand for them, although there is a considerable duty on foreign produce in France. Norway has extensive deposits, but very little of it is good. Some was used for ashlar at the Junior Constitutional Club ; it seems to be standing very well. The finest quality is at Velfjord ; it is only about 100 ft. off very deep water for shipping. There is further north a crystalline white marble, which is a dolomite.

The late war of the Greeks and Turks would seem to have enriched the Athenians, for they are pulling down their old buildings and erecting lofty Pentelic marble ones in their places. These are full of architectural detail, which is very well done. The marble is chiefly obtained from the south or Athens side of the mountain, near the ancient workings. A company is now working the north or Marathon side. I have examined the different quarries very carefully, and am of opinion that they are the same beds as the south side, but the famous old cave statuary marble is not yet found. They are extracting large blocks, some of which are being used in the safety repairs of the Parthenon. We* are working blocks of this marble, which those interested can see. It is considerably harder and more costly to work than Carrara.

Quarrying.

In marble quarrying considerable skill and judgment are required ; the mass of rock is rarely solid enough to be stepped down as in ordinary stone quarries, and blasting cannot be employed, except for clearing away masses of inferior material.

The colouring and marking of such marbles as Pavonazzetto does not extend through the face of the rock, but is a veined mass or bed in the statuary formation, the same quarry producing first and second quality statuary, and first and second Pavonazzetto. The system is, when a choice solid mass is found, to work away from the top and sides all inferior rock round the good mass. It is then sawn or wedged into blocks as large as can be obtained free of shakes. A few months ago I saw in the quarry of Crestola a solid mass so cleared of about 100 tons, worth over £1,000 sterling. The removal of the blocks when quarried is done in a very skilful manner by a specially trained group of workmen, and it is surprising with what ease and rapidity they will remove blocks, often 25 tons weight, from the quarries and down a steep declivity to the loading place, where the blocks are taken away on a specially built truck drawn by sometimes as many as thirty-six oxen. There are no lifting cranes in the quarries—only crowbar levers are used. The men get round the block, each with his lever, and they all lift at the same instant, the signal being given by a lively sing-song. The blocks are lowered down the mountain-side by means of ropes passed round posts. The block, being on a sort of sleigh, is slid over hardwood sleepers greased with a bar of soap. A man rides on the block, and passes the sleepers given him from behind to front.

The old Rhondona and Breche Violets are usually underground quarryings, and extracted by the aid of long saws, a channel being cut first over the block to free it from the roof, and a chamber at each end for the men to saw in. By this means they sometimes get a block of sufficient size to produce two monolith columns 14 ft. long. The red Levanto Breccia and Genoa green is also sawn out of the rock. The re-found Verde Antico of Thessaly is a hard Breccia of greens, greys, and whites. The quarrying of this is by the aid of the wire saw, which is a three-strand endless steel cord of over 2,000 ft. in length running over descending pulleys, and being fed with sand and water : this cuts the marble. This method of extraction is the latest and most improved, as it in no way injures the marble.

It was from the quarries of Synada, in Asia Minor, that the Romans got their beautiful red purple veined Pavonazzetto, and all other sorts of this marble ; these quarries also produced beautiful pure white statuary, and a rare variety of delicate flesh tint. There is on the walls a series of photos of these quarries taken by Baron Schwiter ; specimens are also shown. The antique marbles, Numidian Yellow, Laconian Red, Thessalian Green, Africano Breccia, Carystian Cipollino, Egyptian Porphyry, Laconian Serpentino, Breche Universal, are unique and have no modern representatives.

Unquestionably the best yellow marble known is the Giallo Antico of the Romans. The columns of the Arch of Constantine, and half those of the Parthenon, are of this marble. It varies from deep ochre yellow to pale and a delicate rose colour ; its markings are red and blue purples, the grain is crystalline, and it is translucent. This is the marble found in the encrustation of the palaces of the Cæsar, the baths of Carracalla —in short, it was the only yellow used in old Rome. The quarries, which are very extensive, are in Tunis, near the frontier of Algeria ; they were extensively worked about fifteen years ago by a Belgian company, which went to grief owing to having an engineer as chief of the quarries instead of a practical quarryman. The next in quality is the yellow of Siena, which is familiar to all. The best quality of this yellow is now not obtainable. Beautiful panels are often seen in old Adam chimney-pieces.

The South of France, Spain, and North Italy produce about a dozen yellow varieties, but they are all inferior in quality to the two first named.

The first coloured marble used by the Romans was the Carystian (Cippolino) from the Island of Eubœa ; there was more of this used in Rome than all the other colours added together. The first reason may have been that owing to the immense size monoliths could be got as supports for their porticos and basilicas, but great quantities were also used for decoration ; it opens out into chevron pattern more beautifully than any other marble. There are dozens of old quarries on the Island that have been examined by French, Germans, and Italians during the last twenty years for the purpose of reworking, but in all cases it was found that the Romans had taken all the good stuff away. About four years ago a mountain that slopes down to the sea and away from any mule track, was found on its sea face to have a large number of old quarries. These contain an almost inexhaustible quantity of first class marble, which can be got in large sizes.

These quarries I am now working, and those interested can see monoliths made of it, some fourteen feet long, for the new Roman Catholic cathedral at Westminster, and it is being used at the Royal Academy by Mr. Jackson in the vestibule improvements. Some twenty years ago a Swiss Cipollino was found, with colourings very similar to the old, but with very different markings, as it does not produce, when opened out, grand patterns, and, although it

* Messrs. Farmer & Brindley.

stands well in detached monoliths, experience proves it will not stand on new walls or floors.

Onyx Marbles

Some thirty years ago a very extensive deposit of arragonite was found near Tlemcen in Algeria, and the old quarries were here from which the Moors obtained this beautiful marble so plentifully used in their mosques at Tlemcen. The purchaser of these quarries was Signor Del Monti, an Italian resident at Oran, and he it was who for commercial purposes named the material "onyx," from its translucency, like the finger nail. This misnomer "took on," and is now generally applied to all this class of very translucent marbles, some of the most beautiful of which have of late years been found in Mexico and in South America. Just recently it has been found in the Caucasus. It would be better to call it lime onyx, so as not to confound it with onyx proper, which is silicious. The formation of this material is most likely a deposit from hot springs, such as goes on now at several well-known springs in different parts of the world. The rock Oriental alabaster was used extensively by the Egyptians; a most exquisite example is the famous sarcophagus in the Sir John Soane Museum. The Egyptian quarries are in the eastern desert; they were reopened and extensively worked by Mahomed Ali for his great mosque at Cairo.

The beautiful monoliths which support the baldachino over the high altar at St. Paul's, outside the walls of Rome, were presented by Mahomed Ali. This Arragonite marble is produced chiefly by the lime water droppings from the roofs of caves forming stalactite and stalagmite.

A short time ago, I visited some very interesting deposits in Traz os Montes, Portugal; one very large cave had a floor thickness of some six feet, with hundreds of stalactites actually extended until they were engaged to the floor mass, forming a labyrinth of natural columns, and other caves had become completely filled up, so that blocks of very large size could be extracted quite sound. Last year also were discovered at Amiato the quarries that supplied Rome, Siena, and Naples with the brown, yellow, and honey varieties.

The colouring of these marbles is usually iron in solution. As beautiful as the Mexican varieties of onyx are, they are rarely successful when used in architecture, for wall surfaces, or mouldings. For decorative articles, as room embellishments with ormulu, as used by the French, they are a decided success. The yellow and brown variety, less translucent, as seen in the Paris Opera House, there is not the same difficulty in using.

Serpentines.

The serpentine marbles, of which we have extensive and massive rocks at the Lizard, in Cornwall, and Banff, in Scotland, although beautiful, have never proved of much architectural value, chiefly owing to the thin veins of steatite containing iron pyrites, which expand when exposed, and cause the work to split up. It was used considerably thirty years ago in Gothic work, and several good fonts were made. There is no doubt that the broader and simpler way the material can be treated the better.

The French would seem to have been more successful than we have been with this our own material, as there is in Paris an important front near the Place de l'Opera which is certainly very good and is standing well. The massive architraves to the doorways of the old museum in Berlin, by Schinkel, are made in a grey-green serpentine, very dark in colour. These large doorways are grand and impressive.

France is very rich in coloured marbles; the most important are those of Sarrancolin, the reds of Cannes, near Carcassonne, the yellows of the Jura and Du Var, the mottled reds and greens of Campan, and the green of Maurin. There is a complete series of 700 cubes in the National School of Public Works, in Paris.

Algeria is famous for rich reds. Those of Oran and Chennoua are the best; the latter were used in our National Gallery. Spain has also grand marbles. A good collection of these, which number about 250, will be found in the Mineralogical Museum of Madrid. Portugal has famous quarries of rose colour, near Cintra.

British Marbles.

You are all familiar with our beautiful Devonshire red and grey marbles, of which there are a considerable variety, many of which are sound and good, and far superior to the Belgian reds; but owing to heavy railway rates, they cannot compete at all in price. The same remarks apply to the Derbyshire and Staffordshire ones, which have almost gone out of use. this is sad, when we consider the first marble mills in this country were those of Ashford, near Bakewell.

Ireland has good marbles, too. The Connemara green is unique, and the black is excellent, but still the carriage and bad quarrying beat them. The fact is that more beautiful foreign marbles, owing to water carriage, can be got into London for as little or less cost than our own.

It is pleasing to know that England has always held her own in marble work. I do not think anything can be found better done or more difficult than our old Purbeck Early English and Early Decorated work. You will call to mind Westminster Abbey (with its Chapter House and tombs), the Temple Church, Salisbury and Lichfield, and the Royal Tomb of Edward II. at Gloucester, the Shrine of St. Alban, the Grey Monument of York, and the elaborate Bishop's tomb, at Rochester, of which a cast is before you.

Alabaster.

We have in Derbyshire extensive deposits of a beautiful decorative stone that is used extensively for interior work, and which comes in cost between marble and stone. I mean the sulphate of lime, alabaster. This must not be confounded with Oriental alabaster, which is a carbonate of lime, and hard, while our English alabaster is comparatively soft, but tough, and takes a good polish. For monumental work it has been used since the thirteenth century, and during the Decorated and Perpendicular periods it became the material most used for effigies and altar tombs, most of which are very beautiful; but the grandest period for its use was the English Renaissance. The important monuments erected in this style are artistic productions with an individuality of which we have reason to be proud. Just look at the examples in Westminster Abbey; their delicate and bold mouldings in contrast, the alabaster with a dull polish, only sufficient to show the colour; their inscription slabs and columns of black marble, the whole effect heightened and brought together by a judicious use of colour and gold. Further to perfect their colour scheme, they sometimes diapered their black shafts with delicate surface work. Their inscriptions were cut with a flat ground, not V-shaped; the result is they are readable at any angle.

As to the modern finish and polish of alabaster, my conviction is that in intricate and delicately moulded work, with carvings and sculpture, glass polish is a mistake. And as alabaster is used instead of marble on account of cheapness, if we leave out the polish we further reduce the cost. Nothing looks worse than some parts polished and others not. Sooner than polish carvings, do as the mediæval men did, gild them.

In Rouen Cathedral is a splendid monument of the time of Francis I., executed in English alabaster. In the north of Spain, near Bourgos, we find grand monuments, made in a delicately yellow-tinted alabaster, nearly as hard as marble. The old workings would appear to be lost; I have spent much time in trying to find them, but without success, although I found an inferior variety something similar.

Alabaster is an excellent material for lining the walls of hospitals, as it is non-absorbent, and is not affected by acids. It contains about 50 per cent. of water, and is so hydrated that it will not absorb any more liquid; but if heated to over 200 degs. Fahr. it parts with its water, and turns to plaster of Paris, so it is not suitable for chimneypiece work next the fire. Most of the imitation marbles that periodically appear, are alabaster baked, which will then absorb any fluid colour you like to apply.

The Italian statuettes we see so much about are often only white translucent alabaster of Voltera, which is boiled, producing an effect similar to statuary marble.

Granites

A very important industry that has made immense progress the last thirty years is that of granite work. The Scotch of Aberdeen are entitled to the credit of this revival, which may be accounted for by the superior quality of their granites, their greys, reds, and rose colours being excellent. The amount they do in monumental work alone is enormous, immense quantities of which go to America.

The last few years have made us acquainted with the beautiful granites and labradorites of Norway and Sweden. These the Aberdeen workers import in rough block. It is only of late years that granite could be sawn economically. This is now done by the aid of chilled iron shot, or crushed steel, which are American inventions; and lately they have given us another still harder material—carborundum. This is next to the diamond in hardness, but it appears to lack toughness, as it soon crushes up into mud.

There has been used within the last few years, in our street buildings, a large amount of polished granite work, and when it is broadly detailed and kept to one tone of colour, it looks well. But I do not think we should like to see Waterloo Bridge and the Embankment polished, and certainly polished cemetery work generally looks very hard and uninteresting, while all monuments designed on Celtic lines are ruined whenever polished, and nothing can be worse than trying to get effect by cutting off the polish to produce a pattern.

Of all decorative architectural stones ever discovered, none has yet been found to surpass the Imperial Egyptian porphyry of the Romans; its purple colour is unique, which colour it will retain for ages unimpaired; it is rich, but not gaudy, and is one of the chief colour glories of the churches of Rome. What would Henry III.'s tomb look like if the porphyry slabs were removed? Porphyry columns are the chief glory of St. Sophia in Constantinople; and it is so appreciated by every custodian of an Italian church, that if he has only a fragment, he is sure to show it you.

The old quarries of Mons Porphrities are only about twenty miles off the entrance to the Gulf of Suez. There is an inexhaustible quantity of the choicest material remaining, and through the Suez Canal it can now be got to Europe at a very reasonable cost, and with improved methods of working might be available to us for structural decoration, the same as it was with the Romans. The only thing wanted to achieve this is twenty-five miles of tramway.

Museums.

A very complete collection of the marbles of the United Kingdom will be found in the Museum of Practical Geology; also in the Natural History Museum. Foreign as well as British specimens are fairly collated. Then again, in the British and South Kensington Museums many interesting pedestals and works of art in coloured marble may be seen, also good examples of Roman pavements.

In the University Museum of Oxford is the famous Corsi collection, consisting of 1,000 specimens; these, I am delighted to say, have now fallen into the keeping of Professor Miles, who has had them placed in a good light. Many at present are in drawers, but he will be pleased to show them to anybody interested. There are two similar collections to the Corsi, made by Belli; one in Brussels, the other at the University Museum in Rome. The Museums of Edinburgh and Dublin have each a fine collection, chiefly British.

Polish on Marbles.

Labour with the classic Greeks was of little consideration, as they certainly finished their works regardless of cost, but their white marbles in architecture they never polished (except the joints where it could not be seen); everything was left from the tool. There were no bright shining surfaces to reflect and injure the form. Polish you do not see anywhere on the Acropolis of Athens, and in the hundreds of beautifully sculptured stela of the museums of Athens, London, Paris, and Berlin you find nothing but tool finish.

For London and English towns, with our smoke and dust, we may require a finished surface that dust will not cling to, but I do not think bright polish helps us very much, for we all know how dirt will cling to the surface even of glass. The examples before you show Pentelicus marble polished, dull-polished, and tooled. The dull egg shell polish I think you will prefer. Coloured marbles have to be polished to bring out their beauty, but even in these, glass polish has sometimes a garish look.

Marble Pavements.

The pavements of the Egyptians and Classic Greeks were close-jointed, thick slab blocks. Later the Greeks produced a few examples of tesselated mosaic. But the most important pavement period was undoubtedly that of the Romans, which, in the beginning of the empire, was a continuance of Greek designs and methods, most likely executed by Greek artists and workmen.

The universal system soon became, throughout Rome and her extensive colonies, that of tesselated mosaic, which was executed in a way that has never been done since. Just call to mind the infinite variety of design seen in these pavements; many are figure subjects, heads, and every description of animated life, fish of all sorts swimming in the waters (shell fish, and nets on the beach)—animals of all types grouped and posed naturally and artistically, that few artists even now can equal. In addition to all this animated drawing, tree foliage was treated freely, growing, full of life, but adapted in the ablest of design to its purpose; plants of all sorts were grouped, and conventionalized, to fit their position; leaves and flowers arranged as circling wreaths, others as borders, straight and curved, of fret and guilloche, interlacing round circles and angular forms, with the greatest ease and freedom. All we now know and can do by the aid of reference-help, the Romans knew in the third century. They also knew how to execute durable work by having a good, proper foundation, and using tesseræ three times as deep as ours, making a much firmer key. How little we know about the artists and art workers of these Roman tessera pavements! It would appear that with every Roman legion there must have been a corps of sappers and miners, as they practically found everything in the way of useful rock and mineral veins, which they worked on scientific methods. They, further, must have had a sort of artists' corps, consisting of art designers and workers, or these art pavements never could have been produced. We may further ask what became of the art in this and other colonies when the Roman occupation ceased? It would appear to have departed with them, as the pavements which had been universal now became obsolete.

The art never went quite out in Italy, as the Popes were always caring for old pavements in the way of removing and repairing, and at Venice the enamel mosaics of Murano kept the art alive. The modern revival we have to thank the French for, in the building of their opera-house, and the importation of Venetian workmen to carry out their designs. From France the art came here, and soon spread throughout Europe and America. For these pavements a good concrete foundation is absolutely requisite, and it ought to have time to dry out.

The method of sticking the tesseræ on a paper cartoon, which is turned over and rolled or beaten into the coating of lime plaster, and afterwards rubbed down with soft grits, is familiar to you all. When large slabs of colour are introduced to get contrast, it is requisite to insert a dummy slab of common stone while the beating of the tesseræ is being done. The dummy slab is then broken up to get it out; this does not disturb the bedded tessera. Wood will not do, as it swells with the wet.

The Romans sometimes used tesseræ of 1 in., covering large areas with one colour only, red or green porphyry or Giallo Antico. The effect is very imposing when enhanced with a flowing border of great width, as seen in the Baths of Carracalla. These 1 in. tesseræ of marble in black and white, in a variety of patterns, are used for the street pavements and public squares of Lisbon, and answer well, as it is very hilly.

Sectile.

The sectile or slab pavement, arranged in different patterns of marble and porphyry, is very effective. There are examples in Rome on the Palatine, the Basilica Julia, and the Pantheon. I think the simplest are the best. These are large slabs of rich marble, opened out with only a border slab of another colour round, such as large slabs of Pavonazetto, opened out with simple borders of yellow statuary. Also Pavonazetto slabs, with St. Ambrozio Verona for border, is a success. Carystian Cippollino so treated, with Verde Antico bands, makes a rich but retiring pavement.

Pavements of marble squares, black and white, have been used in England since the sixteenth century, if not earlier; they are bright and clean, very durable, and not costly; red and white is also good, but I prefer the black, not polished, which is a soft grey black; these now have in a great measure superseded encaustic tiles.

The Opus Alexandrinum pavements which abound in Rome, and an example of which we have in Westminster Abbey, are geometrical patterns made with porphyries and marbles, the grand effect being produced by the values obtained by large circular slabs in contrast with delicate pattern work. The large circles are section slabs of Egyptian Porphyry columns, the smaller circles are usually green Porphyry of Laconia. The grand pavement under the centre dome of St. Mark's, Venice, consists of twelve Carystian slabs making an area 30 ft. by 26 ft. with a rich Mosaic border all round. You will all remember the Ruskin controversy as to its irregularity; this is now levelled and done up; and not this alone, but most of the pavements in the church and nearly all the grand ones which are the glory of Rome have been all made "brand new" the last few years.

Another sort of pavement, very effective, is the Florentine type of the Baptistry and San Miniato; they are foliage and figure patterns—inlays of black-green Verde de Prato into white. The subject is always the white slab. The same treatment is applied to the wonderful pavement of Siena Cathedral.

In designing marble pavements use as few colours as possible, and put the work on a good foundation.

The Italians and French during and since the Renaissance period have used marbles and porphyrys in various ways for furniture and objects of *vertú*. Many of the Florentine and Milanese tables are real works of art and costly productions. They further introduced marble plaques into ebony cabinets, which are still sought after by collectors. The various French works in marble and ormulu, especially of the Empire period, are generally refined and good. Much of this class of work made by the Chinese and Japanese is good and suggestive.

Monuments.

From the time of the Early Egyptians down to the present the best materials obtainable have been employed for memorials to the dead. With the Egyptians, no stone was too hard or too difficult to work.

The Greeks chiefly used marble, and all who have had the pleasure of studying their monuments in the museum of Athens cannot help being impressed with their simplicity and beauty. Each one tells its own tale at a glance, without attempting to decipher the short inscription.

Architecturally there is a great variety. The Stelæ have mostly a flat pediment, to throw off the rain, with simple mouldings; the profile sections are flattened on the face; the sides invariably taper; the simpler have a relief panel of two or three figures, showing the farewell shaking of hands, with often the faithful dog looking on; nothing can be more pathetic. The more important have sculptured figures in high relief, often two-thirds life size. The sculpture comes boldly in front of the side pilasters. The whole thing gives the idea of the design and execution being by the same artist. I do not think they are "Art and Craft" productions. We are much indebted to Dr. Murray, of the British Museum, for bringing out of the basement and dark stores an interesting collection of these monuments. He has placed them in a good light, in a separate room, at the end of the Parthenon Gallery. South Kensington has some good casts, which might, for educational purposes, be added to.

The Greek sarcophagi were always refined, and are well worth study. The museums have usually obtained those that are richly detailed and filled with sculpture, but simple moulded ones, like the one at Girgenti, I think show better the Greeks' skill in subtlety of detail.

The Romans at the first worked on Greek lines, but later got into a bold and unrefined type of work, especially in their sarcophagi and altar form of monument. But their small sarcophagi, and urns for funeral ashes, are of great variety, beautiful in form, and, as marble work, exquisitely wrought. The British and Sir John Soane's Museums contain excellent collections.

The Byzantines made sarcophagi of enormous dimensions in porphyry and Verde Antico. They were large enough to take the deceased in full robes; the designs were simple in detail to suit the coloured material. The Verona tombs of the Scaligers of later date are much on the same Etruscan lines.

Christian Monuments.

How interesting most of the cathedrals and old churches of this country and the Continent are owing to the Christian monuments they contain! Many of these buildings are real museums, the monuments giving the history—national, parochial, and architectural. Unfortunately, owing to church restoration, we have lost many, while others have been skied where they cannot be seen.

The want in many of our cold-looking church interiors is colour. This could be very much helped by coloured marble monuments. How cold most of the white monuments in St. Paul's Cathedral look! many of them are very costly, but how little they add in way of colour! Contrast the sculptured ones with the Parthenon sculptures that we now know had colour pattern on them, or the beautiful works of Donatello and others in Italy, where gold and delicate colour are freely used. But we need not go abroad for colour precedent, when all our grand monuments in Westminster Abbey, from Henry III. down to James I., are full of colour.

For modern work in sculpture, Rosso Antico, Giallo Antico, and Black produce good work, especially for reliefs. The Romans and Florentines have left us numerous examples in most coloured marbles.

There ought to be an effort made to get back memorials into our churches, for it is sad to know that a person who has been a constant worshipper in a church, has taken interest in parish affairs, and done good in various ways, should at his decease have no simple record placed to his memory in his church. He is buried in some distant cemetery, amongst thousands of others who have piled over them masses of marble or granite void of merit in design. The friends of the deceased feel bound to erect what they call an imposing monument, or it will never be noticed. Now, would it not be better, instead of placing a costly pile in the cemetery (where it is frequently not seen until the next interment), to erect over the grave a simple record in durable material and place on the church walls a small but artistic monument? I say small, because the church walls can only hold a certain number. If the memorial is to a man entitled to arms, then give him his arms and a short inscription; or it may be a small panel of sculpture, portrait, or anything appropriate with colour. By this means we enrich the church and record the deceased; but little can be done until the clergy can fully appreciate its importance; and if they give permission, it must be in this style or that to suit the church or match some poor one already there.

Jointing.

Masonry jointing for built work is the proper method, but when marble has to be applied to iron construction, as covering of stanchions and girders, then special methods have to be adopted for the occasion, the things to guard against being expansion and vibration.

In wall surfacing with marble slabs, vertical angle joints, with a mitre quarter of an inch square check, answer very well; and in strongly-marked marble mouldings going round a tablet, or even small opening, the ordinary picture frame mitre is the best for effect.

In the fixing of slab work it is best to leave a small open space at the back, and use bronze clamps with a projecting notch to prevent the slabs being knocked inwards.

In the jointing of chimney-piece work heat expansion and contraction in some cases has to be provided for.

I find when a piece of marble 1 ft. in length is heated up to 230 deg. Fahr. it expands about one-thirtieth of an inch, at 300 deg. Fahr. one-sixteenth, and up to red heat one-eighth, but in each case on cooling it only contracts half of the expansion.

Chimney-pieces.

For skill in chimney piece construction we must go back to early Monastic times. These builders found out that a long lintel in one stone could not resist breaking when over their large wood fires. To obviate this they jointed their "heads," using some form or other of wavy or stept joint. And when marble is similarly exposed to a great heat this is the only safe method of jointing.

North Italy, in the provinces embracing the cities of Genoa, Florence, Venice, and Milan, was the country for early chimney-pieces

dating from 1400 to 1600. Venice, owing to its local building material being Istrian or Verona marbles, "was always a marble-working city;" in addition to these they brought from Greece, along with their coloured columns, blocks of white. Istrian stone or marble which is hard and receives the most delicate chisellings was the favourite material. The designs, which are Renaissance, mostly consisted of rectangular projecting canopies with architrave, frieze, and cornice supported by corbels well built into the wall, under which are pilasters or ornamental columns with caps and bases. Most of the chimney-pieces are beautiful in design and well executed. The "antique-mongers" of Florence and Venice have grabbed them whenever they had a chance, and they copy and make "new old" ones to the fullest extent by staining and smoking them over wood-shaving fires, until it will almost defy any expert to say if the work is new or old. So I advise you when buying these chimney-pieces to purchase them on their merit and not as antiquities; then you are safe.

Belgium, which is a marble country, has produced many good canopied chimney-pieces. The most famous is the grand one in black marble at Bruges. France is perhaps the richest country for good chimney-pieces in every style and date. They are found in every old palace, château, and castle; there is a series of simple ones in the rooms of the Louvre in Paris, one in Egyptian porphyry, another in lapis lazuli, another Rosso Antico, and so on. These have ormolu mouldings. The refined Adam works are not easily surpassed, either in design, execution, or economy of good material. The original drawings of many of these are in the Soane Museum. A bold "ovolo" moulding in coloured marble all round the fireplace opening is always safe.

You will see in the room a number of specimens, others showing methods of jointing and colour combinations. In conclusion, I will say—use as few colours as possible in your work, and the nearer you keep to one the better.

In the discussion which followed, Dr. A. S. Murray, in proposing a vote of thanks, said that the impression left on his mind after listening to Mr. Brindley's extremely interesting and detailed paper, and after seeing the large number of beautiful specimens of marble which he had brought there for their inspection, was that Mr. Brindley must know almost everything about marble, ancient and modern, that it was possible to know. He felt almost like blaming Mr. Brindley for not having discovered twelve years ago the quarries of Carystos in Cipollino, for at that time he (the speaker) had to replace the base of the old Parthenon sculptures at the British Museum with a different base. He consulted Mr. Brindley in order to get a Cipollino marble such as was now being used in London, but it could not be obtained at the time. There was one little contentious matter in the paper which they had listened to, and that was as to the colour of the Parthenon. Mr. Brindley said that the bright yellow colour was due to the presence of iron in the marble, and to the action of the light on that. But there was another view to which attention would have to be given. A year or two ago a young American student examined the architrave of the Parthenon very carefully, spending a winter in doing so; he also examined the sculptures in the British Museum, and he came to the conclusion that both sculptures and architrave had been covered with a very thin translucent size or coating of crushed marble, which not only had the effect of taking the rawness off the marble, but also enabled the decorators when painting on the patterns along the architrave to paint with great rapidity and great beauty; and he pointed out also that the places where we find this colour best preserved are in the hollow parts of draperies and such like, which had not been exposed to the weather so much. The only way he (the speaker) could reconcile that view with Mr. Brindley's was by supposing that this thin translucent size had been made of crushed marble in which there was also iron, such as there was in Pentellic marble, the yellow colour in both cases coming from the iron.

Mr. A. Bolton, in seconding the vote of thanks, said that Mr. Brindley had made a subject which many of them might have thought dull quite lively and interesting. He had also given them good advice as to places to visit in Italy, some of which many of them might not have previously heard. Mr. Brindley had shown them the value of having some definite pursuit, which, while carrying them at times into out-of-the-way places, might also produce most interesting results. The great point about marble was that its use required much more thought than was usually given to it. It was essentially an expensive material, and it was often to be seen employed with little judgment, and sometimes even in a ridiculous manner. In using it one was often at a loss to know the principles upon which to proceed. He thought that some of the most interesting examples of the use of marble were to be found in the churches of Palermo, where there were enormous dadoes, 12 ft. or 14 ft. high, mostly of white marble, and generally treated in a vertical manner, being set off by borders of inlay work, above which the walls were clothed in gold mosaic. This seemed to be a remarkably good treatment, and very sensible from the point of view of seeing the mosaic, which was raised well above the eye, while the marble made a very pleasant and cool base for the mass of rich colour above. The floors were also treated in the same judicious way. In La Martorana, a Sicilian church, there were very broad white slabs of marble, enclosing panels of Opus Alexandrinum, worked out with elaborate patterns, thus dividing the floors up into oblongs suitable to the plan of the interior, while the combination of plain surface and rich pattern work was very striking in effect. The same thing could be seen in many churches at Rome; it depended upon which examples one saw first as to the impression produced by other and similar examples met with afterwards. As to marble pavements, there seemed to be a suspicion in regard to geometrical design at the present time; at all events, modern artistic ideas seemed to be opposed to it. One of the most celebrated pavements in the world, *i.e.*, that at Siena Cathedral, was, however, most satisfactory when looked at from that point of view, the oldest part—the geometrical—being the finest; while the later work, though more pictorial, was the less successful. It was unsatisfactory not only from the point of view of pavement design, but also from the standpoint of the general architectural effect of the building, which was a point of view from which pavements were not always considered. The idea of geometrical design in pavements lasted for a long period. The Church of the Salute at Venice had a most elaborate late Renaissance pavement, which was a very ingenious piece of setting-out. In treating pavements too pictorially they were getting on dangerous ground, as when they introduced pictorial representations such as were to be found in some of the later Roman pavements, which, besides, were not examples of the right use of mosaic in cubes. The earlier and better pavements were very much freer in the use of the tesseræ, and more conventional in design. In reference to the use of marbles in England, it was a matter that required great caution. In 1700, during the Adam period, the material had often been used with great discretion. He had in his mind an old house in Kent where the hearths had been made of exceptional size to show off some fine purple and white Breccias. The effect of these slabs, with mantels of the same material, was very good. As a modern instance of the thoughtful use of marble he might mention the beautiful cortidor in Mr. Val Prinsep's house at Holland Park, by Mr. Philip Webb.

Mr. Andrew Oliver asked Mr. Brindley if he knew what tools the old workmen used?

Mr. Matt Garbutt asked Mr. Brindley if there were many coloured marbles that could be used in London for exteriors with any chance of their surfaces remaining more than a year or two? He (the speaker) had not come across many the face of which would last for long. The colours of a marble monument in the church of St. Bartholomew the Great, Smithfield, could not be made out before the restoration. Of course, where the surface had gone it could be brought up again by polishing; but if that were often done the substance of the marble would soon be worn away. As to fixing marble slabs on new walls, so that they should not be affected by damp, he had not seen much done in the way of fixing the marble in metal frames; though it had obvious drawbacks, some such method might be managed with good results. The slabs might be put in bronze frames, which, where the marble was thick enough, could be hidden. He did not think that that could be more iniquitous than the use of marble as a mere mask for other materials. In reference to the expansion of marble, he took it that there was not much expansion at ordinary temperatures. The boiling-point was not reached except near fireplaces.

The Chairman said that Mr. Brindley had stated that it was better not to use Mexican onyx. Would Mr. Brindley tell them why that was?

Mr. Brindley said the chairman had misunderstood him. What he said was that Mexican Onyx was difficult to manage. He had seen a number of attempts, but very few of them had been quite successful.

The Chairman said they must all thoroughly agree with Mr. Bolton that the most satisfactory designs in marble were geometrical designs. Where figures and small ungeometrical features were introduced, the result was wholly unsatisfactory. In regard to Mr. Brindley's idea as to the desirability of putting more monuments in our churches, and placing on the walls portraits of our departed friends, there might be some difference of opinion. He agreed, however, with Mr. Brindley as to the need of getting more colour in our churches by the use of marble, and with his belief that in England we had lost very much in not introducing in our buildings colour in different materials; but he could not agree with him in thinking that it was best, if possible, to keep to one colour throughout. It was the glorious diversity of colours in St. Marks which made that building so sublime.

The vote of thanks was then put to the meeting and heartily agreed to.

Mr. Brindley, in the course of his reply, said that he quite agreed with Dr. Murray and the American student that the Parthenon Sculptures must have been coloured, as border lines were still visible on them; and when we considered the archaic statues in the Acropolis Museum, which were in statuary marble, beautifully coloured, it became difficult to imagine that the Greeks would at once discontinue their colouring in the Parthenon sculptures. As to the Westminster Abbey figures, very few people knew what the colouring of those figures was like when the work was done. Many of them were treated on more or less Greek lines of colour. As to Mr. Bolton's remarks about Breccia hearths, he expected the hearths were nearly all cracked; when marble hearths cracked they lived, for the marble then had room for contraction and expansion. Marble hearths ought to be jointed. As to the backs of fireplaces, if they were treated in long narrow strips, placed vertically, they would stand almost any amount of heat. As to Mr. Oliver's question, they did not find any bronze tools because all the early quarries they knew of had been worked by the Romans, and the Romans used steel tools. They had found in the "Verde Antico" quarries an iron saw embedded in a block, and an iron plummet something in the shape of a fish. As to marbles which would retain colour out of doors, he was afraid that there were not many that would do so. Irish green, verde antico, and magnesian reds and purples would. Every one was charmed with the exterior of St. Mark's, Venice. The twenty porphyry columns gave life to the entire front, and the amount of colour in them was just the same as when they were put up, for porphyry retained colour. The forty-three verde antico columns and arch and panels in bases of this marble and antique cipollino have also all kept their colour. Of course the acid in the atmosphere of a town like London was very destructive, but it would not touch green magnesian. He had collated now practically the whole of the marbles of St. Marks, and he hoped shortly to give the result of his work to the Royal Institute of British Architects for publication in their transactions if that were thought desirable. In the three fronts and atrium there are 308 columns, 193 of which are grey cipollino or proconessium, fourteen Carystian cipollino, forty-three Verde antico, twenty Egyptian porphyry, nineteen Synadic pavonazzetto, eight Bianco nero, six red lumachella, and four granite. He thought the Chairman had misunderstood him when he said they should keep as near as they could to one colour. His opinion was that young men liked to use as many colours as they could, the result being that those colours destroyed all breadth, &c. He was lately in Winchester House, where he saw some good marble which was altogether wrongly used, one part destroying the other. They could never get marble to go together on the ordinary

pigment colour scale, for there was so much variation in each piece, and they could not be tried in small pieces. At the King's Hall, Holborn Restaurant, Mr. Collcutt had tried to use marbles in one colour. Though he had rung the changes to some extent, he had not got violent contrasts.

The Chairman announced that at the next meeting, on the 24th inst., a paper would be read by Sir Thomas Wardle on "Art as applied to the Weaving and Printing of Textile Fabrics," illustrated by lantern views.

The meeting then terminated.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday at the County Hall, Spring Gardens, Lord Welby, Chairman, presiding.

Loan.—The Finance Committee recommended and it was agreed to lend St. Giles-in-the-Fields and St. George, Bloomsbury, Guardians, 8,100*l.* for the purchase of property for a receiving-house.

No. 17, Fleet-street.—The Report of the General Purposes Committee contained the following paragraph :—

"It has been reported to us that the above premises are about to be demolished and rebuilt, and it was suggested that in view of the historic interest attaching to the house, the Council should be asked to exercise its powers under the General Powers Acts, 1898, of spending money in connexion with buildings and places of historic or architectural interest, and, with a view to the preservation of the premises, to vote a sum of money for the purchase of the freehold. The proposal, however, would involve an expenditure of over 26,000*l.*, and after allowing for recoupment by way of rent which would be receivable by the Council, a charge would be left on the rates of a sum which is estimated to amount on an average to 115*l.* a year. We do not think the Council would be justified in incurring this expenditure, and have accordingly decided to take no action in the matter. We recommend that the course taken be approved."

Mr. Bruce, Chairman of the Finance Committee, moved to refer the recommendation back for further consideration. The house was of considerable archæological interest, and it undoubtedly belonged to Cardinal Wolsey. The ceiling of the principal room was unique, and it should be retained in its present position ; if it were removed, it would lose much of its interest. The Council possessed the power to preserve historic buildings in London, and the present was a suitable occasion for exercising that power.

Mr. Bull seconded the amendment, remarking that the Council would never forgive itself if it allowed the house to be pulled down.

Mr. Nathan Robinson said he thought the Council should draw the line at buying barbers' shops. A more monstrous and ridiculous proposal could not possibly be made. The Archæological Committee tried their 'prentice hand upon a rotten old shanty, somewhere in the East End, called Rutty's House. They descanted upon its beauties as a specimen of Tudor architecture, but upon examination it was found that hardly a bit of the original building remained, and that most of it was brought from no one knew where by no one knew whom. He hoped the amendment would be rejected.

Mr. Westacott thought the price asked for the house was too high.

Mr. Shaw Lefevre was of the same opinion ; and he thought that if the recommendation of the Committee were accepted the owner would propose more reasonable terms.

Lord Meath, Dr. Longstaff, and Mr. Benn supported the amendment, which was carried by a majority of 34.

Tramways at Westminster.—The Highways Committee recommended in connexion with the proposed Millbank improvement :—"That the standing orders limiting the period for considering applications to Parliament be suspended so far as may be necessary to enable the Council to consider the following recommendation relative to application to Parliament in the next session. 'That the Parliamentary Committee be instructed to include in the Tramway Bill to be promoted by the Council next session, powers for the Council to construct a double line of tramway, to be worked by means of an underground system of electrical traction, along Millbank-street, after the widening of that thoroughfare to 70 ft. shall have been effected.'" After discussion the Council divided, when there voted for the recommendation 56 ; against, 28.

The result of the voting was therefore in favour of the scheme, but inasmuch as a two-thirds majority of the whole Council was required for the suspension of the standing orders the recommendation was not carried.

Housing : Nightingale-street area, St. Marylebone.—The Housing of the Working Classes Committee reported upon an insanitary area in Nightingale-street and Samford-street, Marylebone, and expressed their satisfaction at the courteous and willing spirit in which the freeholder, Lord Portman, had met the emergency. If the Council would acquire the leasehold interests, Lord Portman would recoup the Council the expense, and would also provide dwellings for the rehousing of the people displaced by the clearing of the area. The net cost to his lordship was estimated at 6,000*l.*, and the gross cost, which must in the first instance be paid by the Council, but which would be repaid by Lord Portman, was estimated at 10,800*l.* The committee proceeded to say :—"We have had a scheme prepared for giving effect to the proposals, and we submit the same for the seal of the Council. It must, however, be pointed out that should Lord Portman be unable from any cause to carry out his part, the whole of the cost thereof will have to be borne by the Council. We think it right to inform the Council of this risk, but we have no doubt that the Council will still wish to encourage, on the part of landowners in London, every such attempt to themselves deal with their own insanitary property as is now being made by Lord Portman."

The scheme was approved, and the necessary resolutions were adopted.

Having transacted other business, the Council adjourned.

COMPETITIONS.

MUNICIPAL BUILDINGS AND LIBRARY, PLUMSTEAD.—The names of the authors of the three premiated designs for the proposed municipal buildings and public library, Plumstead, are now officially announced as follows : First design (No. 3), Mr. A. Brumwell Thomas, 7, Queen Anne's Gate, S.W. ; second design (No. 30), Messrs. Hall, Cooper, & Davis, 21, Old Queen-street, Westminster ; third design (No. 22), Messrs. Henry Ingle Potter and Sydney W. Cranfield, 19, Lincoln's Inn Fields, W.C.

WHARFEDALE INFECTIOUS DISEASES HOSPITAL.—It is understood that Mr. E. J. Silcock, C.E., of Leeds, the assessor appointed by the District Council, has sent in his report, and that the decision of the Council will shortly be made.

ARCHITECTURAL SOCIETIES.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—The first monthly meeting of the Sheffield Society of Architects and Surveyors was held at the School of Art on the 14th inst. The President, Mr. Joseph Smith, was in the chair. On the proposal of Mr. Innocent, seconded by Mr. Hadfield, and supported by Mr. Fred Fowler, it was resolved to send a letter of sympathy and condolence to the family of the late Mr. T. J. Flockton, who was the first President of the Society.—Mr. J. R. Wigfull then gave an interesting lecture descriptive of "Some old Derbyshire Houses." He began by drawing attention to the large number of examples of old domestic architecture, to be found in the close neighbourhood of Sheffield, showing traces of a great variety of styles included in the term English Renaissance. They were interesting as instances of the honest use of local material and simplicity of treatment. Much could be learned from these houses, and he urged upon students the desirability of measuring and sketching the best of them. For the purposes of comparison the buildings in the district lying to the west of the railway between Totley and Unstone were selected and described. The lecturer remarked that they could all be visited in the course of a day's walk. By means of a map the relative positions of the various buildings were shown. Commencing with Woodthorpe Hall, an excellent example of the simpler houses of the seventeenth century, the lecturer drew attention in turn to Fanshawe-gate, Horsley-gate, Unthank, and Barrow Woodseats, the latter a large and interesting example, and one having some old farm buildings which present features worthy of notice. Cartledge Hall, with its wealth of oak panelling and ornamental ceilings, came in for rather detailed description. Reference was then made to Holmesfield Hall, at one time the residence of the Burton family. Here the very handsome doorway, with its elaborate heraldic shield, was described. Attention was also drawn to the oak panelling and plaster work to be found in the inside of the house. Dronfield Woodhouse, where there are traces of an old English garden, was then mentioned, and many old houses in Dronfield were described. The old Hall at Unstone, perhaps one of the finest examples in the neighbourhood, formed the last of the series. The lecture was illustrated by means of photographs and measured drawings of the buildings described. At the close the lecturer was heartily thanked, on the motion of Mr. Hadfield, seconded by Mr. Gibbs, and supported by Messrs. F. Fowler, Patterson, T. Winder, and others.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

AT the meeting of the London County Council on Tuesday, the following applications under the London Building Act were considered. Those applications to which consent has been given are granted on certain conditions. Names of applicants are given in brackets. Buildings are new erections unless otherwise stated.

Line of Frontage.

St. George, Hanover-square.—A projecting entrance doorway to No. 14, Berkeley-square, St. George, Hanover-square (Mr. W. G. Horseman for Mr. L. V. Harcourt).—Consent.

Width of Way.

Clapham.—A one-story studio in the garden at the rear of No. 89, Altenburg-gardens, Battersea, at less than the prescribed distance from the centre of Green-lane (Mr. H. Bignold for Mr. J. Whiffin).—Consent.

Islington, South.†—Buildings on the west side of Pleasant-place, Essex-road, Islington (Mr. R. Nevill).—Consent.

Southwark, West.†—Addition to the "Prince of Wales" public-house, St. George's-road, Southwark, at less than the prescribed distance from the centre of Hayles-street (Messrs. Waring & Nicholson for the trustees of the Lambeth Hayles Charity Estate).—Consent.

Lines of Frontage and Width of Way.

Kensington, South.—That the Council do not comply with the request of Mr. F. J. Chambers for permission to retain the houses with shops on the north side of Edge-street, Kensington, on the site of No. 1, Vine-place, at less than the prescribed distance from the centre of Edge-street.—Agreed.

Width of Way and Space at Rear.

Southwark, West.—Two blocks of buildings to be inhabited by persons of the working class, on the west side of Green-street and the south side of Pocock-street, St. George-the-Martyr, Southwark, with an irregular space at the rear, and the boundary fence across the entrance to Chadwell-court at less than the prescribed distance from the centre of Green-street (Mr. O. Fleming for the Housing of the Working Classes Committee of the Council).—Consent.

Means of Escape at Top of High Buildings.

Strand.—That Messrs White & Co. be informed that the Council has examined the plans submitted by them, showing an alteration in the means of escape in case of fire, proposed to be provided on the sixth and attic stories of a building intended to be erected on the site of Nos. 173 to 179, Strand, and No. 2, Norfolk-street, for the persons dwelling or employed therein ; and that the Council considers that the means of escape now proposed is unsatisfactory and should not be accepted as a compliance with the requirements of Section 63 of the Act.—Agreed.

The recommendations marked † are contrary to the views of the Local Authorities.

YARMOUTH MASTER BUILDERS' ASSOCIATION.—The second annual meeting of this Association was held at the "Duke's Head" Hotel, on the 6th inst., Councillor G. W. Beech in the chair. The annual report and balance-sheet were read and confirmed, and the following officers elected, viz. :—President, Mr. G. W. Beech ; vice-presidents, Messrs. W. Wright and R. Carter ; treasurer, Mr. J. Ward ; hon. secretary, Mr. G. H. Wright ; assistant secretary, Mr. F. Grimble ; and eight committeemen. The annual dinner and other business were then discussed, and referred to the new committee.

Illustrations.

INTERIOR: "LE NID."

THIS view of a sitting-room, with a little shrine or oratory opening out of it, is from a drawing exhibited by the architect, Mr. M. H. Baillie Scott, at the last Royal Academy. The scheme colour, as shown in the original drawing, and unfortunately lost in our monochrome reproduction, is light but harmonious, consisting largely, if we remember rightly, of blue, white, and a soft and warm-toned yellow.

"Le Nid" is appropriately so called, being a house constructed entirely in the air. Its foundations are formed by a rustic timber frame fixed to pine trees many feet from the ground, in a pine forest in Roumania. Besides the rooms shown here there is a bedroom, a kitchen, and a wide verandah. It is therefore very literally a "nest," and its construction is quite rough and rustic, and a visitor who opens the front door is quite unprepared for the brilliant colour scheme of the interior.

The opening verses of Rossetti's poem "The Blessed Damozel," suggested the general appropriation of this poem as a kind of key to the whole treatment—

> "It was the pavement of God's house
> That she was standing on."

The architect had instructions from the Grand Duchess of Hesse (sister of the Crown Princess) to the effect that each room was to have a separate flower as its *motif;* the "Sunflower" saloon, with "Lily" chapel adjoining, the bedroom with Poppies, &c. Over the bedroom door the motto is the passage from the "Ancient Mariner"—

> "To Mary Queen the praise be given,
> She sent the gentle sleep from heaven
> That slid into my soul.'

Another point was that the symbol cross of the house of Hesse, which resembles what is called the Fylfot cross—a cross with the extremities of the arms returned at an acute angle, was to be worked into the decoration.

The ceiling is an attempt to suggest the effect of the sky seen through interlacing branches of trees—to introduce conventionally, in fact, what would actually have been seen if the building were unroofed.

The beautifully appropriate inscription over the entry to the oratory,

> "We two will stand before that shrine,
> Occult, withheld, untrod,"—

is also from Rossetti's "Blessed Damozel."

This is truly the poetry of house-building.

SOOT PRAY FARM, WORPLESDON, SURREY.

SOOT PRAY FARM, or rather cottage, was a small building standing in a pretty garden, and the idea was to enlarge the house and improve the garden, and so turn the place into a small country house, which would at once be comfortable, and would not have to undergo the period of desolateness which most new houses have to go through, unless they happen to be on the site of an old one.

The present illustration does not show the old buildings, which are of brick and tile, but the new, which have been designed to be as far as possible in keeping with the old cottage, and are of the same materials. The additions and alterations have cost about 1,200*l.*, and have been carried out by Messrs. Harris & Son, of Woking, from the designs of Mr. Leonard Stokes, of Westminster.

The drawing was exhibited at the last Royal Academy.

ARTISTIC DECORATIONS OF THE PARIS MAIRIES.

THE two pages of illustrations given under this head include one piece of sculpture and four decorative wall and ceiling paintings, forming portions of the artistic decoration of five of the Mairies or district Town Halls of Paris.

They are all specially referred to, and their positions described, in the leading article in the present issue.

THE SURVEYORS' INSTITUTION:

PRESIDENT'S ADDRESS.

THE first ordinary general meeting of session 1899-1900 of the Surveyors' Institution was held on Monday in the new premises, Great George-street, Westminster, Mr. T. M. Rickman, President, in the chair.

The minutes of the last meeting having been read and confirmed, and the Hon. Secretary, Mr. J. W. Penfold, having read a long list of donations to the library, the President delivered the opening address of the session.

He first congratulated the Institution on the completion of the handsome building in which they were assembled that evening. It was a home in every respect worthy of the Institution, and would meet all their practical requirements for many years to come. The lease had nearly a thousand years to run, and the best means had been taken to obtain solidity and durability of the structure itself.*

It had often struck him that the public had a very imperfect grasp of the scope of the name "surveyor," by which they were known. There were surveyors who were primarily managers of agricultural estates; others who were purely valuers; others who were connected with building and with the system of tendering and contracting for works, as well as in some well-known instances with the superintendence of them; while, as though these occupations were not sufficiently diverse, the term was also applied to a number of persons engaged in duties not at all related to the profession, such as surveyors of shipping, surveyors of taxes. To the uninstructed mind the connexion was of the most shadowy description between the man who managed a great agricultural estate in the capacity of agent, and the man whose daily duty it was, say, to measure up the materials and the labours involved in the erection of a large building in any of our towns, yet the connexion was a very real one when one looked beneath the surface. Its best exponent would perhaps be found in the word "property"—on the one hand in the land when employed in its most natural way for the production of food for the sustenance of man; and on the other hand, when a more remunerative use had been found for it as a site for houses or for buildings for the thousand and one industrial purposes which arose out of the complex conditions of modern civilisation. The management and development of property and its most perfect form of utilisation under the particular time and circumstances of the case was, therefore, the common ground on which the various branches of the surveyor's profession met. And this brought him naturally to a consideration of the way in which they could best equip themselves for the exercise of a profession which was so intimately and vitally connected with those great interests of property on which our stability as a nation so largely depended.

"We of the older generation," continued the President, "were confronted with difficulties in the acquisition of professional knowledge of which the younger can have no conception. We had to grope our way, as best we could, without text-books and almost without formulated experience of any kind. We had to learn by contact with hard facts, by the penalties which wait upon mistakes, and by the still greater penalties that follow on insufficient knowledge of the work in hand. It was a rough and ready school of training in which the weaker necessarily went to the wall, but I am not sure that it was wholly without its advantages in developing fibre and self-reliance."

All this had changed. The young man on the threshold of his business life was no longer a solitary unit, seizing and assimilating as best he might the scraps of knowledge and professional tradition which chance might throw in his way; but a participator, on terms of absolute equality, in the accumulated stores of knowledge laid up for him in text books, and treatises on every imaginable subject with which he would be called upon to deal. A careful path had been traced for him along which to pursue his studies. His personal success would therefore depend, in future, less on chance opportunities of acquiring the knowledge than on qualities of character which no system of education could confer upon him.

* See the *Builder* for April 1, 1899, for an illustration of the building.

The Examinations.

The President then referred to the Institution's system of professional examinations. In common with all systems of the kind, it had, of course, its weak points. Their examinations were at once too long, and not long enough; too long and exhausting for the patience and endurance of the less physically fit, and too short to be a wholly satisfactory test of knowledge in such a wide range of subjects. How was this to be remedied? An intermediate examination at once suggested itself. This would mean, he apprehended, the division of the Fellowship examination into a preliminary and a final, the former confined to book work, and the latter to practice, pure and simple. Under the present system the candidate too frequently passed on his book work only, which was clearly an undesirable state of things. It would be said that the Institution had already done something towards curing this defect by requiring each candidate to pass in what was called a "typical subject"—a subject distinctive of his proposed line of practice, but the President did not regard this as sufficient. It might be objected that by the introduction of an additional examination they would be adding to the already heavy burdens which their candidates had to bear, but he did not see how this could be avoided. It would be more difficult, no doubt, for an incompetent man to squeeze through the meshes of the net, but, to the man with real knowledge, it would be a help rather than a hindrance to have his work divided in the manner suggested. Nor would there be any practical hardship in the matter. Those who had already passed the test would have no grounds to be dissatisfied with the new departure, and would not be deeply afflicted by its imposition on other shoulders than their own, while those who had not yet qualified could not complain if some further conditions were interposed with the object of making the Fellowship a more enviable distinction when won. Furthermore, he was of opinion that the present system of allowing a candidate to come at the age of twenty-two or thereabouts for his Fellowship examination was an undesirable one. It was true that he could not be actually transferred to the higher class until he was twenty-five years old, but what test of practical knowledge was it possible or fair to apply to a young man only one year past his majority? He would, therefore, apply the test of book knowledge in the form of a first examination for the Fellowship at the earlier age, and the strictly practical test at or after the age of twenty-five, when the candidate would have had some chance of acquiring a measure of actual experience in the work of his profession. That was his personal views only, and he was not speaking in any way on behalf of the Council, who might or might not agree with him.

"You must not understand for one moment that I undervalue examinations like ours," continued the President. "They are of the greatest utility in systematising a young man's knowledge, whatever it may happen to be, but they are not the *ne plus ultra* of professional fitness. An artisan may know the name and use of every tool employed in the prosecution of his craft without being a skilled workman. He may be a master of the terminology of his trade, but break down under the test of work pursued under novel conditions and upon materials to which he is not accustomed. Similarly the young surveyor who has not practical knowledge is useless in his profession. After all, and under the most favourable conditions, examinations are but a rough sifting process. The surveyor's most valuable acquirements come to him, if they come at all, long after his technical studies are past and over.

The Work of the Surveyor.

As the name implies, a surveyor is a supervisor, or, to use the more homely Saxon term, an 'overseer.' The very name implies superior skill, fitting him to be an adviser on matters that lie outside the range of common knowledge. In the very early days of the Institution we had a paper by the late Mr. Jeremiah Mathews, a man well qualified to handle the text entitled 'A plea for culture in the profession of a surveyor.' This was thirty years ago. What have we done, or rather what has since been done, towards the realisation of the higher ideal of the larger general culture for which he pleaded? The surveyor is above all, or at any rate should be, what the French call 'man of affairs.' It is of the essence of his

knowledge that it should be of a wider and more general, if less profound, character than is necessary in some of the more specialised professions. Was it Lord Erskine or Lord Bacon who claimed that all the arts and all the sciences went to the equipment of the successful advocate? This was the language of hyperbole; but descending to the plane of practical life, I think it would be difficult to name a branch of knowledge which the surveyor might not find of service to him at some period of his professional career.

The institution of property and its security are the paramount facts in the life of a progressive community. All the arts and all the sciences are its hand-maidens, necessary to its creation, development, or enjoyment, or dependent on it for reward. The surveyor who to-day is called upon to value, to buy, or to sell a house in residential Kensington, may be called upon to-morrow to value, or buy, or sell an estate, say in Staffordshire, devoted, so far as the surface is concerned, to agriculture, but rich in underlying minerals, dotted with mills or factories, traversed by canals or railways, and affected as regards its market value by all manner of public rights, restrictive customs, and legal obligations, the whole of which must be understood and mastered by the surveyor worthy of the name. Am I therefore using the language of exaggeration in claiming that the surveyor's information should be somewhat encyclopædic, not after the manner of the specialist, but after that of the man of wide general knowledge? But, you will ask, how is a man in these strenuous days to find the time, even if he possess the ability, for becoming such a paragon of knowledge? My answer is, let him keep the aim in view and do what he can towards its accomplishment. The world is full of folk that look without seeing. The motto for the young surveyor should be, 'Observe, observe, observe.' Let him not be content to regard anything as outside his range, or beyond his capacity to understand, whether it be questions of finance and the movements of prices, or the laws of sociology, or the principles of science, pure or applied, or economics, or legislation, or law, or history. He is to be the advisor to his fellow men in matters that, more nearly than any other, touch their material interests, and there is nothing that can be known that may not have a bearing, either immediate or remote, on those interests or that is alien to the proper furnishing of his mind.

The surveyor enjoys special opportunities for observing much that lies beyond the paths of others. The configuration of the surface of the land and the physical causes which underlie it, the colouration of the fields and the reason for it, the striæ on the face of the rock, the varied coloured margins of the streams that cross his path, above all the history of our country. The facts with which he deals lead him to the consideration of the growth of national institutions, the variations recorded in history's changeful page in the relations of owners and occupiers, the flora of the fields and hedgerows, anywhere and everywhere a thousand and one sources of knowledge lie open to the observant eye and can be utilised. All these subjects appertain more or less to the surveyor's profession. It is true that he is concerned mainly with the present and the future of property, but the past has its value, and provides matter for enlightenment.

My experience now extends over fifty years, and I am glad to be able to record my conviction that, taking the profession as a whole, the status of its members has very greatly improved during that period. It is not only that we have shared in the general rise of culture throughout the community, but that the profession itself has risen in public estimation. As our examination lists show, it is yearly attracting to its ranks more and more of those who formerly betook themselves exclusively to the so-called 'learned professions.' This has, of course, two sides to it: it proves on the one hand the severity of the competition in those professions, but it proves on the other that our calling has taken its place beside them.

Arbitrations.

My duties only occasionally lead me to the witness-box or the seat of the arbitrator, but I have seen enough of both to assure me that our present procedure for arriving at the value of expropriated property stands much in need of reform. I agree with all that was said by my predecessor in this chair with reference to the position of the professional witness. But I would go further. I would not only abolish the oath as administered to him, and frankly accord the witness the position of an advocate for his side, but I would put a limitation on the practice of cross-examination—that cherished privilege of our legal friends — having long come to the conclusion that it is rather an exercise in forensic dexterity than a means of assisting the man who has to decide the issue. To a well informed and competent arbitrator, cross-examination is a mere weariness to the flesh—a tiresome display of superfluous dialectics. He is perfectly able (or should be so, if he has been wisely chosen) to assess the weight and importance of the evidence in chief; and if he be not, he is by no means assisted by a wordy war between the witness and his cross-examiner. I would therefore give the arbitrator absolute power to dispense with the cross-examination of any particular witness if he be satisfied that his evidence in chief is honest and relevant to the facts, or to comment freely on such evidence if it has made the contrary impression on his mind. . . .

Building Matters.

The changes during my lifetime have been very great in all matters connected with my particular professional domain. There have been changes in our methods of measurement, in the constructive details to which those methods are applied, in the materials to be dealt with and, above all, in the training and position of the workman who gives visible form and substance to our labours. Forty years ago the workman in the joiner's shop had to square, to plane, to mortice, to mould, and to mitre with his own hands. Now a large part of these labours is done by machine and machine hands, and the modern joiner does little else than fitting, fixing, and altering. Whatever may be the merits or demerits of the present race of artificers, I always feel that we owe their predecessors in the past a deep debt of obligation for what they did for us in discovering the capabilities of materials and adapting them to constructional art.

There is no doubt that if a main function of the ancient trades guilds was the protection of the various crafts, another, and not inconsiderable one, was the perfecting of their arts. I should like to feel that the same duality of purpose animates the craftsman of the present day; but I suppose we must regard ourselves as living in a transition period—a period of temporary strife and confusion from which a new order of things will emerge, and perhaps a reversal of the present relationship of the classes. We cannot tell what this new order of things will be, but of this we may be certain, that the general welfare of the community should be the determining factor, and that class jealousies and selfish rivalries will be allowed to have but a subordinate influence on the ultimate result. We must remember, however, that it is not merely the craftsman who has drifted away from his original relations to his work. His employer has also greatly shifted his standpoint. In former days a man about to erect an important building had nothing in the nature of organised resources at his command. He had probably to collect his artificers from far and wide; to use, owing to difficulties of transport, such materials as were ready to his hand, and, generally, to gauge and measure for himself the special possibilities of the work. As a necessary consequence his whole soul was in his work, and it became stamped with his individuality and with that of the workmen engaged upon it.

All this is changed. The modern general contractor, with his costly machinery, his *entourage* of dealers in materials, and his organised retinue of artisans and labourers, undertakes the work without enthusiasm, on a cold commercial basis, in an atmosphere of penalties, and passes on when it is completed to another so-called 'job' without leaving a trace of his identity behind him. This is no doubt business, but it is not favourable to development, except on the lines of a brutal utilitarianism. I call attention to this merely by way of illustrating the fact that it is not the workman only that has drifted away from his old moorings. And this brings us to another point. To those of our members who, like myself, are mainly occupied as building and measuring surveyors, the present state of the skilled labour market is a matter of thought and anxiety. The most acute symptoms of the crisis in the building trades naturally display themselves in this all devouring metropolis of ours, but the effects will be felt before long (if they have not already revealed themselves) both in the quantity and the quality of the skilled labour available for building operations in the country districts, which London is sucking dry. In this we are all alike interested.

Apprenticeship.

The seriousness of this state of things demands a closer attention than I can give it in this address, but I cannot pass it over entirely. There has been recently published a most important paper in the form of a report of the special sub-committee of the Technical Education Board of the London County Council. This report makes it abundantly clear that the country workshop is now the only nursery of the London building artisan, for it is in the country alone that he finds the opportunity of apprenticeship to his craft. It is astonishing to learn from this report that 'forty-one typical London firms engaged in various branches of the building trade, having among them 12,000 employées, have only eighty apprentices and 143 so-called "learners," instead of 1,600, which would be about the normal proportion.' I may explain that a learner is an unapprenticed lad, generally the son of a journeyman. Now it is evident that we are here confronted by a very serious state of things The men are insistent in their assertion that the fault lies with the masters, who, they allege, refuse to be troubled with apprentices in their crowded shops, where the most effective use has to be made of every inch of bench-room. Many of the masters, on the other hand, charge the men with an intentional restriction of the number of apprentices, with a view of limiting the output and creating an organised monopoly in the interest of the present generation of artisans employed in the trade.

Let us briefly examine these two apparently contradictory contentions. First, as regards the masters. The tendency of the time is undeniably towards the absorption, or extinction if you like, of the masters in separate trades, and the aggregation of work in the hands of the capitalist employer, who finds it to his interest to substitute mechanical for hand processes in every possible way. Some change, however, in the way of resuscitating the employment of masters of separate trades may now be noticed. So long as he can get such skilled labour as he requires, it is a matter of indifference to the general contractor where the skill has been acquired, and he does not feel under any obligation to encumber his shops with raw lads, who are troublesome to manage, and add nothing to his profits. This is, in my opinion, a very short-sighted policy, and one which, if persisted in, is bound in time to affect the building trade most disastrously. I am glad to be told that several leading builders see this, and are opening their shops again to apprentices.

The allegation against the men is probably true in at least an equal degree; but we must not be unjust to them. It is, perhaps, a bold thing to say, but I believe it to be the case that in every organised calling there is a tendency, perhaps unrecognised, certainly unacknowledged, towards restricting the numbers of those that enter it. It exists just as much in the professions as in the trades, but takes the form not of actual but virtual exclusion by a rise in the amount of premiums to be paid, an increase in the difficulty of the examination to be passed, or in greater stringency as regards the conditions of admission. Much of this is, no doubt, unconscious, but the facts are as I have stated. The action of the trades as contrasted with that of the professions is, therefore, less a difference in kind than in degree. The practical point is how far it can be carried without injury to the permanent interests of the calling. It would appear that in certain trades unregulated efforts to limit the number of the workers has resulted in irreparable mischief to the trade itself. The public must be served. It will not stand aside or suffer its interests to be postponed to the interests of the workers. As a consequence, invention is stimulated, and new mechanical processes enter the field in competition with hand labour. For example, the carpenter and joiner is fast becoming a mere fitter and fixer, while the plasterers, whose economic sins have perhaps, been the greatest, have called into being the Nemesis of fibrous plaster and other 'decorative' appliances, and have set the architects on an eager quest for some substitute for the present clothing of our walls and ceilings.

It is important to consider whether there

has been any such deterioriation in the quality of work as might be expected in connexion with the present revolt of the trades. We are met at once with the familiar observation, 'Work as good as ever can still be obtained if you like to pay for it.' But that is not the question. What we want to know is, whether the average quality of work has declined—the vast mass of work performed, not for rich employers, but for the great middle classes, who after all constitute the great body of employers? I fear the answer would be in the affirmative, and it is here that the decline of the apprenticeship system makes itself felt. Work of this class is the happy hunting-ground of that epitome of all incompetency, the 'handy-man,' a tradesman only in name, who has picked up such knowledge as he possesses in his capacity of plumber's or carpenter's mate.

What is the remedy for all this, and where is the skilled artisan of the future to come from, seeing that both his natural progenitors decline to call him into being? You will ask, are there not technical education boards, schools of arts and crafts, manual instruction classes, and heaven knows what besides, all constituted for this very object, amply subsidised with funds, and sponsored by public and semi-public bodies? It is true that all this machinery exists, that great things are expected of it, and that something has been done by its means in the direction of the higher theoretic training of the skilled, practical hand, but this is surely a very long way short of the aims of the promoters. What can these institutions do in face of the jealousy with which they are regarded by the unions as possible engines for counter-working their cherished policy of restriction of numbers? The unions are willing enough to allow their members to avail themselves of the higher theoretical training thus placed within their reach, for it is all in the direction of strengthening the monopoly at which they aim, but they regard, with a scarcely-veiled hostility, any attempt on the part of technical education classes to manufacture mechanics, and the boards themselves betray a nervous anxiety lest the attitude of the unions be changed from one of passive to one of active hostility. I have nothing but praise for these classes as a means of developing a higher capacity in the existing race of artisans, and, if you like, as a means of disseminating manual skill and promoting artistic perception among the general population, but to look to them as a recruiting ground for the skilled labour market is, I feel, mere delusion and confusion of thought. It is simply doing, or endeavouring to do at one end, what the trades unions are as carefully undoing at the other, and, the effort will, I fear, be crowned with futility. The solution of the difficulty must come, if it come at all, from the parties primarily interested—from an intelligent appreciation of the facts on the part of the masters and the men under pressure of public necessity.

I understand that there is no indisposition on the part of many of the men's organisations to regard with favour the reintroduction of the apprenticeship system under certain safeguards against the flooding of their trades. On the other hand, the necessities of the masters will before long lead them to see that they are drawing on a limited stock of skilled labour without taking measures for making good the waste—a process which cannot go on indefinitely. The same state of things is evident in that class of skilled agricultural work like thatching and dry-walling not strictly agricultural in character. There is hope, therefore, that the masters will see the necessity of laying aside their objections to the presence of apprentices in their shops, and will come to some agreement with the men as to an increase in the number of young hands to be introduced, in order to keep the trade alive and prevent it from degenerating as regards quality of work.

No doubt there are social reasons operating to some extent towards diminishing the number of young men entering the various building trades. So experienced a builder as Mr. Henry Holloway states in evidence in the report I have referred to, that 'a large proportion of the sons of London artisans become clerks in City offices,' a statement confirmed by a later witness; while a third, singularly enough, declares that a large proportion of those attending the technical classes are clerks and unskilled men, seeking by this means to enter the ranks of skilled labour. Here is the systole and diastole of the present movement most instructively displayed.

All the talk about government grants and apprenticeship funds I look upon as absolutely vicious, if not totally absurd. Where are funds to come from sufficient to affect even the fringe of the difficulty, and how could they be applied? Alas for the erstwhile doctrine of *laissez faire*, once regarded as the note of all true progress! No, the revival of the apprenticeship system, with all that it implies in the way of efficiency in the worker, must come from within, not from without, and I have sufficient faith in the good sense of my fellow countrymen, whether of the masses or the classes, to believe that it will be brought about as soon as the parties immediately concerned are convinced of its necessity, and not one moment sooner.

For the form of these remarks, and for the illustrations taken from the Report on Technical Education, in support of my views on that subject, I am greatly indebted to our Secretary, Mr. Rogers, who has used and condensed my observations in a manner greatly to the advantage of those who have done me the honour to listen to the address which it has been my duty to deliver this evening."

Sir John Rolleston, in proposing a vote of thanks to the President for his able address, said that they honoured the President not only because of the high position which he occupied in his profession, but for his refinement, culture, and learning outside the limits of that profession. The occasion on which they met marked an epoch in the affairs of the Institution, for it was the first time they had assembled in their fine building to hear a Presidential address. Although they owed so much to their leaders for the position which the Institution occupied, the future prestige of their profession was in the hands of those who were now joining them, and he recommended every young man who was entering the profession to emulate the President and give some proportion of his leisure to other matters than those strictly relating to his calling. Even in his (the speaker's) time a great improvement had taken place in the status of the surveyor, and he hoped that that improvement would continue. As a solicitor was a gentleman by Act of Parliament, he hoped that the surveyor might earn a better title to that by virtue of education, nature, and feeling.

Mr. J. H. Sabin seconded the vote of thanks, remarking that many of them looked up to their President with admiration, but those who had come into close contact with him admired and respected him the most. It was, perhaps, fitting that the Institution should take a new departure that night under the lead of its first quantity-surveyor President. The President had dealt with a variety of subjects, and he had shown that he had some knowledge of land-surveying. He (the speaker) would suggest to land-surveyors that they should acquire some knowledge of quantity-surveying, for with that knowledge they would be better able to deal with some matters that had to be considered on estates. As to apprenticeship, he was not sure whether it would not be an excellent thing for the sons of artisans in London, or boys who were prepared to enter carpenters' shops, to be drafted into the country for their training. While it might be unfortunate that the London masters were not prepared to take apprentices, if the country masters could be persuaded to take them it would not be an unmixed evil.

The vote of thanks was then put to the meeting and heartily agreed to.

The President, in reply, said that twenty-five years ago he had found it necessary to take up some subject outside the mere routine of his profession, and he thought that they would feel a similar need of such a relief to the mind.

The meeting then terminated.

The next meeting will be on the 27th inst., when Mr. P. E. Pilditch will read a paper on "Party Walls under the 1894 Building Act."

The following Members, having passed the requisite Qualifying Examination, have been transferred during the Recess from the Class of "Professional Associates" to that of "Fellows" of the Institution, viz.:—Chamberlain, G. A. R., Malvern Wells; Jarmain, W., London; Lake, C. J., London; Lang, C. F. D., Weybridge; Osenton, C., Ashstead and Leatherhead; Marshall, A. G., London; Barns, S. A., London; Crowther, K. N., London; Farmer, H. C., London; Fox, F. R., Barnstaple; Lancaster, J. R., London; Morris, W. H., Chirbury; Ogilvie, R. M., Hayward's Heath; Saunders, S. B., London; Scott, A. L., Bury St. Edmunds; Secker, J. E., Warrington; Wigram, R. S., Leeds; Wilson, F. R., Upper Tooting.

MODEL ARTISANS' DWELLINGS, SHOREDITCH.

On Monday the Earl of Rosebery opened some municipal dwellings which have been erected for the Shoreditch Vestry at Hoxton. The dwellings, which have been erected upon the Moira-place and Plumber's-place area, are the first erected in London by any Metropolitan Vestry or District Board, such work having hitherto been confined to the London County Council and the City Corporation. The dwellings consist of three blocks of buildings, each five stories high, two on the Moira-place area fronting Britannia-street and Provost-street respectively, and one on the Plumber's-place area fronting on Provost-street; and are capable of housing 400 persons of the working classes in twenty-five tenements of two rooms each and fifty tenements of three rooms each. The dwellings have been erected on the site of two unhealthy areas which adjoin one another, and have been treated as one under the title of "Moira-place and Plumber's-place Scheme."

The number of persons displaced by the demolition of property on the area was 533, of whom 400 will be re-housed by these buildings, and seventy-two by a further block to be erected at the corner of Nile-street and Provost-street, with shops below facing Nile-street. These dwellings will cover 2,807 superficial yards, whilst 1,360 superficial yards will be let for commercial purposes, 260 square yards as recreation ground, and the remainder of the area will be laid out as streets, making up the total contents of the area to 11,240 superficial yards.

The working drawings and specifications were prepared by Mr. Rowland Plumbe, the architect of the buildings. The lowest tender of 17,222*l.* was that of Mr. James Steed, being 14,640*l.* for the two Moira-place blocks and 2,582*l.* for the Plumber's-place block, and was accepted by the Vestry. The work was subsequently carried out by Messrs. Matthews & Bailey.

The Moira Place blocks are the two largest, each fronting on to streets widened to 40 ft., and set back 3 ft. from the same, and with a large paved courtyard between. Their site has a superficial area of about 17,796 ft., of which 7,841 ft. is taken up by the buildings. These contain twenty-five two-room sets and forty three-room sets, thus accommodating 340 persons. The Plumber's Place block is similarly situated to the others as regards the street, and also has a courtyard in the rear, and the site has an area of 3,416 superficial feet, of which 1,367 ft. is taken up by the buildings. It contains ten three-room sets, with accommodation for sixty persons. All the blocks of buildings are five stories high, the heavy cost of land rendering such a height necessary from a financial standpoint. The total contract for the three blocks amounted to 17,222*l.*, and deducting from this 650*l.* provided for contingencies and works to adjoining properties, gives a price of 7¾d. per foot cube for the buildings complete, or 41*l.* 10s. per person accommodated.

The tenements are approached direct from the staircases, there being two on each landing. The entrance to each tenement is through a gate of open ironwork into a lobby, having the living room door on one side and the lobby on the other. The lobby is well lit and ventilated from the staircase and by a fanlight over the water-closet door. The object of the entrance gate is to allow of the water-closet being inspected without going into the rooms of the tenants, whilst its position is as far as possible from the rooms. The staircases are lit by electric light, and have a large window to every floor, and an extra casement window, which can be left permanently open for ventilation, at the highest point. The staircases are finished with a glazed brick dado, and Fletton bricks above. The construction of the buildings is fireproof throughout. Staircases and landings are of granolithic. The tenements are quite self-contained, and consist of a living room of 167 ft. in area, looking in every case on to the street, and fitted with food cupboard, dresser with pot-board under, a 2-ft. 6-in. self-setting range with open and close fire, a scullery 9 ft. by 6 ft., approached from the living room and overlooking the courtyard, fitted with sink and draining-board, with coal bunk for two cwts. under same; a 6-gallon copper, and a 2-ft. open cottage range, so that the scullery can be used as a kitchen should the tenants wish. There are no dust shoots, but a galvanised iron dust pail is provided for each tenement. The bedrooms are approached direct from the living room, and in the case of the three-room tenements, one bedroom has an area of over 120 ft. and the other over 96 ft. The two-room tenements have a bedroom of an average area of 127 ft. Each bedroom is fitted with a mantel register stove. The height of the rooms is 8 ft. 6 in. throughout. The living and bedroom walls are plastered and distempered in fancy tints with a darker dado and separating line. The scullery walls are in Fletton bricks. The waterclosets are fitted with "Oatley Patent overflow soil and anti-siphonage pipe junction." The rain water and sink wastes discharge into gullies having cleaning caps, and manholes are placed on the main drains at all bends and junctions

The tenements will be lit by electric light, where required by the tenant, at an inclusive cost of 8d. per week for two-room sets and 10d. per week for three-room sets, in addition to rent. The elevations are in brown glazed brick plinth for one story, and yellow stock brickwork above, picked out with red quoins and bands, and a small amount of brown Portland stone in the gables. The roofs are constructed on the Mansard principle, and covered with green slates. The rents to be charged for the tenements will be 8s. 6d. for the three-room and 6s. 6d. for the two-room sets. The total annual rental for the three blocks will amount to 1,530*l.* 15s. This rental, taking the total cost of erecting the buildings and the value of the two plots of land at 22,917*l.*, and allowing for all rates, lighting, supervision, and collection of rents, empties, and losses, insurance and sinking fund to reproduce the total outlay at the terminaiion of sixty years, at 2½ per cent., repairs and incidental outgoings, will produce an interest of 3¾ per cent. on the total outlay. The courtyards or the tenements and foot pavements and roadways adjoining the buildings are paved with asphalte.

The storage of water for domestic use in the buildings is accomplished by means of eight of Alexander's Patent Water Storage Cisterns, which are so constructed that no dirt can be admitted, and they are self-cleansing, whilst no air is admitted except when drawing off is taking place.

The tar-paving work was carried out by Messrs. Bradshaw & Co.

TRIBUNAL OF APPEAL.

THE LONDON COUNTY COUNCIL ADMIT AN ERROR, AND AGREE TO 50*l.* COSTS.

THE Tribunal of Appeal, under the London Building Act, 1894, sat at the Surveyors' Institution, Great George-street, Westminster, on the 10th inst., to hear an appeal by Messrs. Boulton, Sons, & Sandeman, on behalf of Messrs. Curnick & Company, against the decision of the London County Council not to sanction certain deviations from the plans certified by the District Surveyor, under Sec. 43 of the Act, so far as relates to the proposed erection of a building on the site of Nos. 60 and 62, Regent-street and Nos. 7 and 9, Glasshouse-street, St. James's. The members of the Tribunal sitting were Messrs. Arthur Cates (chairman), A. H. Hudson, and J. Penfold.

Mr. Stewart Bevan, barrister, appeared for the appellants, and Mr. Andrews, solicitor, for the London County Council.

Mr. Andrews at the outset offered an objection to the jurisdiction of the Tribunal over the subject-matter of the appeal. He said there appeared to have been a series of errors so far as he could judge. In the first instance the appellants delivered a plan showing certain deviations from the approved plan certified by the District Surveyor. So far as he could judge the appellants, however, had power to carry out the plan without seeking or obtaining the consent of the County Council. The plan was, as he had said, submitted to the Superintending Architect, and his department, for some unaccountable reason, considered and reported upon it to the Committee. Having done this, the Council were, as respondents in this appeal, in a position the awkwardness of which he was not prepared to deny. At the same time, when the refusal of the County Council was notified, it was quite open for the appellants to say, "the Council refuses to sanction this plan, yet we are satisfied that the law is on our side, and we shall proceed." This course, while being risky to the appellants, would have been far more risky to the County Council, for the latter, in carrying the case into court, would have been compelled to show that the appellants were contravening the Building Act. Of course, the right course for the County Council to have adopted would have been to say that they had no jurisdiction, but having assumed jurisdiction, he was afraid that they were in the wrong.

Mr. Hudson pointed out that Sec. 43, Sub-Section 2, gave applicants the right to go to the Council if they "should desire to deviate." True, the applicant could, in this instance, have done without applying, but he was equally entitled to do so.

Mr. Andrews replied by arguing that this section was not put in the Act with the view to constituting the Council an advisory board to builders. The section rather aimed at protecting vested interests.

Mr. Hudson: What does this objection now come to—that the County Council raises no objection to the plan?

Mr. Andrews: Frankly, the only question now is one of costs. I am quite willing to give an undertaking on behalf of the County Council that they will not raise any objection to the appellants carrying up their building in accordance with the plan already submitted.

Mr. Stewart Bevan intimated his willingness to accept the undertaking provided the County Council paid the costs of the appeal.

Mr. Andrews said he was not admitting the County Council's entire responsibility, for had it not been for the appellant "drawing" that body by submitting their plan, the Tribunal would not have been troubled with the appeal. He further submitted that having "drawn" a decision from the Council, it was still open for the appellants to go on with the building and the Council could not have stopped them, notwithstanding their refusal.

The Chairman referred to a decision by Mr. Justice Wills and said it seemed to him that the appellants were not "drawing" the County Council, but fulfilling a duty imposed by the Act. If the appellants had not submitted the plans they might reasonably have thought they were in a serious position; or, at least subject to litigation.

Mr. Andrews maintained that the appellants committed the initial error in assuming that the plans required the consent of the County Council.

The Chairman: It would have been very simple for the Council to have said "We take no action."

Mr. Stewart Bevan remarked that on receiving an intimation of the Council's refusal, the appellants wrote to the Superintending Architect inquiring upon what grounds their sanction was not given. That was followed by an interview, at which they were told that it was owing to the width of Glasshouse-street, and that the proposed building was too high.

The Chairman, referring to the question that had been raised by Mr. Andrews as to the jurisdiction of the Tribunal, remarked that surely the fact that the County Council assumed the power to deal with the application tended to show that jurisdiction was vested in the Tribunal.

Mr. Andrews: We assumed jurisdiction, and I am afraid you are quite competent to deal with it.

The Chairman: That being so, perhaps the learned gentlemen will consider the question of conferring as to whether some arrangement cannot be come to as to costs. It is very troublesome to have costs taxed, and it is very much better to arrange them.

After a consultation between Mr. Stewart Bevan and Mr. Andrews, the latter announced that he had consented to allow the appellants' 50*l.*, as costs.

The Chairman: Then the appeal is allowed, with 50*l.*, as agreed, costs.

Mr. Andrews: That is so. Mistakes will happen in the best regulated departments.

BOOKS RECEIVED.

THE CASE LAW OF THE WORKMEN'S COMPENSATION ACT, 1897. By R. M. Minton-Senhouse. (Effingham Wilson.)

EVERY MAN'S OWN LAWYER. By a Barrister. Thirty-seventh edition, revised. (Crosby Lockwood & Son.)

Correspondence.

To the Editor of THE BUILDER.

MODERN BRASSES.

SIR,—In connexion with the very able and interesting paper on "Brasses" read by Mr. G. H. Smith at the Discussion Section of the Architectural Association on 3rd inst., at which I had the honour of acting as "Special Visitor," and which has been reported in the *Builder* of this date, I read, and accept most fully, your footnote "Unquestionably; but why not create *good* work of our own?" But, in self-defence I must ask to be allowed to point out, that, in an earlier stage of my remarks, which are not quoted, I laid special emphasis on my belief that architects *can* design good modern brasses, if the public will but give them the opportunity of so doing, rather than relegate them, as they usually now do, to the merely commercial element, which, useful and necessary as it is to carry out such work, should not, as it now appears to do, have the monopoly of design as well as that of production. On this point may I venture to hope that you will agree with me?

E. SWINFEN HARRIS.

November 11, 1899.

*** Our opinion is exactly the same as that expressed above by Mr. Harris. The reports of the Discussion Section which are furnished to us are necessarily brief, or we could not find space for them, and hence probably the real intention of Mr. Harris's remarks on the occasion was not fully conveyed.—ED.

COMPETITION FOR PUBLIC OFFICES, &c., LYMM.

SIR,—It may be of interest to your readers to be informed of the curious ideas evidently held by the promoters of the above competition. Having made personal application for plan of site, levels, &c., as per advertisement, I was calmly informed that applicants must make their own copies of the plan shown to them, and must go out and purchase their own tracing paper for the purpose. The "instructions" (?) consisted solely of a list of rooms drawn up on a half-sheet of notepaper; these also must be copied for one's self! Add to this the conditions as advertised, and I think you have a very striking commentary on the dignity of an architect's calling.

VICTIM.

*** The advertisement (enclosed by our correspondent) contains an offer of two premiums, of 25*l.* and 15*l.*, "the premiated designs to become the absolute property of the Council to adopt wholly or in part without further payment." We quite agree with our correspondent as to these terms; but inasmuch as he must have known them from the advertisement, why did he apply for particulars at all for a competition the terms of which he so much disapproves?—ED.

A QUESTION OF FIXTURES.

SIR,—I am renting a carpenter's shop and yard, which is surrounded by a high wall. A few years since, I applied to the owner for, and received, permission to erect a galvanised iron show-room and office in tke yard, a part of the wall forming one end of the room with a window and door in it, so that it is a permanent structure. I am now thinking of leaving. Can I demand anything for the building? H.

*** This not being a legal journal, we have some hesitation in answering our correspondent's question; but we presume the building in question has become a landlord's fixture. In such cases it is desirable, before a structure is put up, to arrange with the landlord that he shall allow it to be removed.—ED.

The Student's Column.

ROADS: THEIR CONSTRUCTION AND MAINTENANCE.

PART IV.—MAINTENANCE.

21. CONDITIONS OF WEAR OF BROKEN STONE ROADS.

FROM what has already been said with reference to the construction of so-called macadam roads, it will probably have been inferred that the cost and trouble which are necessary to keep them in a proper state of efficiency are both largely influenced by the care bestowed upon their construction. Unfortunately the great majority of roads in this country have never received this original care, but have been handed over to the present-day authority with all the faults resulting both from ignorance in design and carelessness in maintenance which were characteristic of former generations of road-makers. The difficulties which surveyors have to overcome in improving and maintaining such roads are increased tenfold on this account; and they cannot, therefore, in all cases be justly blamed if the roads under their care are not up to the modern requirements. The standard demanded by present-day traffic is a high one, and the tendency of increasing refinements in the modes of travelling is to exact nothing short of perfection as regards surface at all times, and in every season of the year.

Before we enter upon the question of the best way to bring the surface of existing roads up to the lofty ideals of the cyclist, to say nothing of the perfection demanded by the threatened invasion of the motor car, it will be necessary to devote some space to the consideration of the conditions of wear, which are the primary cause of the unsatisfactory state into which roads soon fall if left to themselves. First and foremost amongst these conditions may be placed *consolidation;* for it is evident that an imperfectly consolidated road can never be maintained in a satisfactory condition. We will first consider, therefore, what is meant by consolidation, and then how it may be best accomplished. Codrington, to whose observations on macadam roads we are indebted for a very great deal of valuable information on this point, has shown that a well-consolidated road, which has been thoroughly hardened by prolonged traffic, contains from one-fifth to one-fourth of the whole coating in the form of fine muddy cementing matter, and probably as much as one-third of it is such small material as would be removed as ordinary road scrapings. This condition, to which a well-worn road is reduced, is the result of the wear of the original stones by crushing and grinding in the road. Again, as we have already explained in a former chapter, a mass of broken stone, when first spread upon a road bed, may be looked upon as containing, on an average, 55 per cent. of solid stone to 45 per cent. of void, or interstitial space. This void is more or less reduced by rolling in a newly made road. But when an old consolidated road is analysed it is found often to approach within 95 per cent. of the weight of an equal bulk of solid stone. This proves that the interstices have been almost completely filled up, and the results given above show

that this filling up has been largely brought about by the small detritus which forms so conspicuous a portion of an old road coating. These results agree approximately with the observations of the engineers of the Ponts et Chaussées. The crushing and compression, therefore, which are effected during consolidation, bring about this result, that about one and three-quarter parts of road metalling produce about one part of consolidated road coating; or, put in another way, the road materials, after consolidation, occupy about 60 per cent. of the space which they occupied originally. Of course, the above proportions will vary considerably under different conditions, and with different kinds of road metal. But we may take it that, in the general way, a variable proportion, viz., between 65 per cent. and 90 per cent. of the broken stone put upon a road, wears down ultimately to a state of mud and detritus.

The tougher stones, such as the igneous rocks, do not so readily break up; and roads made of these materials do not in consequence show so large a proportion of small detritus.

Now it was formerly held that if this detritus were added in the first place as binding material, so much wear of the road materials would be avoided, and the road metal would consolidated with the sharp angles of the broken stone preserved.

Obviously, if a road *must* contain this amount of detritus, it is better to add it in the first place than to let it be formed at the expense of the road metal; but we now know that it is possible to secure a perfectly consolidated road with very little detritus present in its composition; and also that such a road is better and more durable under traffic than one containing a larger proportion of small material.

This brings us, therefore, to the question of the influence of binding material upon consolidation. Macadam, as we know, held strongly to the opinion that in a broken stone road the materials can be made to interlock thoroughly by their angles alone, without the assistance of any binding material. Modern experience, however, shows that this is only true to a certain degree. In the lower parts of the road it is probably possible to secure complete union in this way; but the top layer, even with heavy rolling, never becomes sufficiently solid to prevent displacement of the stones under traffic; and also such an amount of movement may take place under the action of the roller that a considerable amount of crushing and wear results before consolidation is completed. We are entering here upon very debatable ground, there being great differences of opinion amongst road engineers as to the necessitity for binding material. Few, however, follow Macadam's method in its entirety. Some mix binding material with the whole mass of road metal, and others use it merely for the purpose of filling the surface voids. Thus there are three perfectly distinct methods in modern practice, and it is necessary to consider which is the best.

There is no doubt that a great deal depends upon the method of consolidation which is adopted. In the old days this was left entirely to the traffic, and, even at the present time, there are many districts in which the road roller is not used. In the case of consolidation by traffic, a large amount of binding material is manufactured from the stones themselves, owing to the excessive abrasion to which they are subjected in the process. Thus, if Macadam's method is strictly adhered to in this case, and perfectly clean road metal laid down, free from all foreign admixture or binding material, it is certain that before consolidation has been completed by traffic alone, more binding material is naturally produced than even the warmest advocate of its addition would recommend. This is, then, the probable explanation of Macadam's views. Under the influence of traffic alone, consolidation can be effected without any binding material being mixed with the road metal. If it is so mixed consolidation is accomplished more readily; the stones do not so easily lose their angular form owing to their becoming more easily bedded without so much movement and mutual abrasion. There is thus an apparent economy both in material and in horse labour. But, on the other hand, the road is less compact and more susceptible to the action of water and frost. It is, therefore, more quickly disintegrated, and produces a larger quantity of mud and dust.

We arrive, therefore, at the conclusion that, when consolidation is left to be accomplished by traffic, the addition of binding material is not only superfluous but positively mischievous, and that Macadam's views in this case hold, not because the stones unite by their own angles—these are all completely abraded during the process of consolidation — but because this method manufactures its own binding material at the expense of the stones themselves. If a road metal is used which, owing to its toughness, resists this abrasion, or if it is such that the abraded matter possesses no binding power, the result is that consolidation never takes place at all, or, if it does, the first appearance of dry weather will set the stones loose to be again kicked about by the traffic and gradually destroyed.

Fortunately this method of consolidating a newly-made road is rapidly becoming obsolete. In spite of the prejudices which still exist in some quarters against the use of the steam-roller, the use of this indispensable aid to the perfect consolidation of a newly-metalled road is now becoming universal. The result is to wedge the lower layers of road metal into a tight-fitting mosaic, in which the presence of binding material would serve only to prevent the complete interlocking of the stones in the body of the road, by bedding them in the binding material instead of fitting them into each other. In this case, therefore, it is also inadvisable to mix binding material with the body of the road metal before laying. But with the *surface* of such a road the result is different. If clean broken stone alone is used the surface must necessarily contain interstices, which in the case of the under layers are filled up by the angles of the superincumbent stone. To finish off the surface of a rolled road in a proper manner these interstices must be filled up; *and this is the proper function of binding material.* Even in this case it is injurious to add the binding material in too large a quantity. So long as all the voids are filled, the less used the better will be the result. It should be spread only in a thin layer, not more than about one-third of an inch in thickness, after the roller has nearly completed the consolidation of the stones. It should not be allowed to penetrate into the body of the roadway, but only to fill the interstices in the surface. The reason for this is obvious. The solidity of a road depends chiefly upon the quantity of stones which are present, and the closeness with which they are packed, and this solidity is diminished rather than increased by the presence of detrital matter.

As mentioned already, the principles which have been thus laid down are not universally accepted. Some road engineers still insist so strongly upon the advantage of incorporating binding material with the body of the road coating that they even recommend the spreading of a thin layer of sand or fine gravel upon the surface of an old roadway before repairing by the addition of fresh road-stone. They contend that the sand or gravel so spread is squeezed upwards during the consolidation of the road, and assists in filling the voids and compacting the stones more rapidly. This cannot be denied; but the result must always be that the increased rapidity of consolidation is gained at the expense of an inferior degree of solidity, a portion of what should be solid stone being replaced by small material altogether incapable of playing any part in supporting the weight of traffic.

The true function of binding material is, therefore, purely superficial. It has no place in the body of the road. The fact that small detritus forms so conspicuous a portion of an old consolidated roadway merely points to the fact, already explained, that these old roads were left to be consolidated by traffic alone; by which means the stones were worn and abraded throughout the whole thickness of the road coating before they became compacted into a solid mass.

With regard to the kind of binding material which should be spread upon the surface of a road some discrimination is necessary. If possible it should consist of the same material as the road-stone itself. Most commonly road scrapings are employed; but as these contain, in addition to detrital matter derived from the abrasion of the road-stone, a large amount of mud and organic refuse, they should be well weathered before being used. Screenings from the same kind of stone as is employed on the road may also be used, and these can advantageously be mixed with a small proportion of sand. Clean, sharp sand, or small gravel may also be employed; and with siliceous road-stone, limestone, or chalk can be used. The use of chalk, however, requires care, owing to its absorptive tendency. If too much is added it is liable to work up into mud in wet weather and to disintegrate during frost. Limestone road metals should have binding material of sand, but never loam of clay. The question of binding material has been discussed somewhat fully on account or its important bearing upon the wear and cost of maintenance of a road. A great deal of extra trouble and expense in the removal of mud has been caused by its injudicious use; and many existing roads owe their rotten condition, and the ease with which they disintegrate, to mixing small material with the broken stone under the delusion that consolidation is improved thereby.

There is one other aspect of the question which is also of no small importance with regard to the maintenance of roads, viz., the influence of binding material upon the porosity of the road. The more impervious the road coating can be made the better will it withstand the wear and tear of traffic. On this account it has been held by some engineers that the addition of binding material to the body of the road coating increases its impermeability. Others maintain, on the other hand, that this is a positive disadvantage; for if water once gets into the road coating it is better to let it penetrate right through it, rather than remain entangled in it. By adding the binding material to the superficial portion only a practically impermeable crust is produced, and with a suitable cross section very little water should find its way through it. With proper sub-drainage this water is quickly removed, and the danger of the road becoming weakened, either by excessive moisture or by frost is reduced to a minimum.

We, therefore, take the view that the voids in a broken stone road should be reduced as far as possible by rolling, and after that is accomplished the superficial voids may be filled up by spreading a thin layer of sharp sand or small gravel on the surface. If chalk is used it should be in very small quantity, and the more finer pulverised the better.

The case is otherwise when angular road-stone cannot be got. Pebble gravels and even shingle, for example, are still used in some localities both for making and repairing roads. No amount of consolidation by rolling or by traffic will make such material bind together until the greater proportion of the stones are either worn or broken to an angular form. Hence pebble gravel or shingle, if clean, should be mixed with a small proportion of loam to assist in compacting the stones. A certain proportion of this will be forced to the top in the form of mud, and will necessitate continual scraping; but a more solid road will be formed than if the above-mentioned description of road-stone is used without any binding material at all. In all other cases, the cleaner the material, the better will be the road, and the less will be the cost of cleansing the surface and maintaining it in a satisfactory state.

The foregoing remarks apply chiefly to the use of binding material in the construction of new roads, but the same principles apply with respect to the coatings of metal laid down for repairs. The metalling should in all cases be first spread in a clean state, and well rolled until consolidation is almost complete. Then a thin covering of clean, sharp sand, or well weathered road scrapings, may be spread, well watered, and the rolling completed until the whole is thoroughly compact. Any surplus binding material, not incorporated with the road, must then be swept off. This will be further alluded to when we come to discuss the repair of macadam roads. In the meantime the question of consolidation by rolling is of such importance that it will be necessary to devote the next chapter to its consideration.

BANK PREMISES, CHESTERFIELD.—The new premises of the Yorkshire Penny Bank, on the Central Pavement, Chesterfield, were opened recently. Mr. Robert Peck was the general builder, the sub-contractors being:—For the slating, Messrs. R. Wragg & Son; plastering, Mr. Roper; plumbing, Mr. Scott. Messrs. Todd & Son furnished the offices. The work was carried out under the supervision of Mr. J. R. Whitaker, Leeds.

CHURCH EXTENSION, SHIREBROOK, DERBYSHIRE.—A new chancel, priests' vestry, and organ chamber were opened at the parish church of Shirebrook recently. The architect was Mr. Hedley Price, of Nottingham, and the contractors Messrs. Fisher Brothers, of Mansfield.

OBITUARY.

SIR THOMAS N. DEANE.—Sir Thomas Newenham Deane, architect, who died in Dublin on Wednesday last week, November 8, was born in Cork on June 15, 1828, and was the only son of Sir Thomas Deane, of Dundancon Castle, co. Cork, by his second wife Eliza, daughter of Robert O'Callaghan Newenham. His father and grandfather had been architects before him, and his great grandfather, David Deane, had been a builder, who left considerable property in the county and city of Cork—indeed, most of his family had been architects, artists, or builders since the middle of the last century. Sir Thomas Deane was, therefore, his father's pupil, and first started as an architect as his partner in Cork about 1849 or 1850. They associated with them Mr. Benjamin Woodward, a young architect of great talent, and under the title of Sir Thomas Deane, Son, & Woodward, architects, built Cork College buildings. Shortly after this old Sir Thomas Deane gradually dropped out of the work, and the younger members moved up to Dublin, but the name of the firm was kept up. One of the first successes of the two younger men was to be premiated in the great competition for the War Office buildings. Afterwards they gained by competition the work of Oxford Museum, and were taken up by Ruskin, who showed great interest in their career. This building led to considerable work in Oxford, and among other buildings there may be mentioned the Curator's House, the Clarendon Laboratory, new buildings at Christ Church facing the meadows, Sir Benjamin Brodie's house, and the Union Society's building. In London they built the offices for the Crown Life Insurance Office in Bridge-street, Blackfriars, and a second building for the same company afterwards in Fleet-street; in Dublin the beautiful building in Trinity College, originally intended for a museum, but now used as the Engineering School. Woodward died about 1858, after which Sir Thomas—then Mr.—Deane built the Kildare-street Club, and had the honour of conducting the Queen and the Prince Consort over that building when they visited Ireland in 1861. From that time he built a great number of buildings throughout Ireland and in Dublin. Among others may be mentioned Tuam Cathedral, the restoration of St. Canice's Cathedral, Kilkenny, work at Kilkenny Castle for the Marquis of Ormond, Portumna Castle for the Marquis of Clanricarde, and many other houses. In Dublin he built the Munster Bank in Dame-street, the Scottish Widows and several other insurance offices. He was among those selected to compete for the new Law Courts in London, for which he received, with the other competitors, a fee of 800 guineas. In 1872 he sent his eldest son, Mr. Thomas Manly Deane, as a pupil to the late William Burges, A.R.A. Mr. Deane gained the Royal Academy Travelling Studentship in 1876, and on his return, in 1878, became his father's partner. The firm then carried out several works, of which the following are the principal:—Various branch offices throughout Ireland for the Munster Bank and the Provincial Bank of Ireland; the Royal Exchange and the Commercial Union Insurance Offices in Dublin; the Town Hall, Bray, co. Wicklow, for the Earl of Meath; rebuilding Loughcrew House, co. Meath, for Mr. J. L. Naper, D.L.; the McArthur Hall (Ladies' College), Belfast, which was gained in competition; buildings for the Church of Ireland Training College, in Dublin; a large house for Mr. Bruce, near Dublin; the Junior Army and Navy Stores, Dublin; and extensive additions to the Lunatic Asylums at Sligo and Monaghan; buildings for the National Telephone Company in Dublin and Belfast. Sir Thomas Deane and his son built in Oxford the Physiological Laboratory and the Anthropological Museum, and shortly after gained in competition the buildings for the Science and Art Museum and National Library of Ireland, which cost over 100,000*l.* They also competed in the great competitions for the Imperial Institute and the completion of South Kensington Museum, in both cases receiving with the others selected large fees for their design on a fine but not very practical plan. Their names were also among those sent up by the Institute of Architects to her Majesty's Board of Works when selection was to be made of architects for the new Government Offices in Whitehall and Parliament-street, which they regarded as a great honour. Sir Thomas Newenham Deane's principal work, however, in partnership with his son, was the building of the Science and Art Museum and National Library of Ireland, the foundation stone of which buildings was laid by the Prince of Wales in 1887, and on the opening of which, in 1890, Sir Thomas received the honour of knighthood at the hands of Lord Zetland, then Lord-Lieutenant of Ireland. This work led to the building of the additions to the Natural History Museum and the Lecture Theatre for the Royal Dublin Society, and the extensive additions now proposed to the National Gallery of Ireland, the contract for which has just been arranged. The Museum and National Library buildings are not yet entirely completed, as originally intended, and further additions are probable, the Government having purchased four houses in Merrion-street, adjoining the Museum, as the site of these additions, one of these houses, belonging to Sir Thomas Deane, being that in which the firm have carried on their business from the very beginning. Sir Thomas Deane felt very much this contemplated change as a breaking of old associations, and it is somewhat pathetic to think that he practically died in the office that he so much regretted to leave.

Sir Thomas Deane was a Royal Hibernian Academician and a Member of the Royal Irish Academy, and held the appointment of Superintendent of the National Monuments and of Ancient Monuments of Ireland, which was a source of great pleasure and interest to himself, and the duties of which he fulfilled with so much ability and to the satisfaction of the Government from which he held the post. His son, Mr. Thomas Manly Deane, who has been his partner and connected with all his works for over twenty years, will carry on the business in the old name of Sir Thomas N. Deane & Son.

MR. T. J. FLOCKTON.—We regret to record the death, in his seventy-fifth year, of Mr. Thomas James Flockton, architect, the senior partner of the well-known firm of Flockton, Gibbs & Flockton, of Sheffield, which took place on Tuesday last week, at his residence at Woodleigh, Worksop. Like Sir Thomas Deane, Mr. Flockton was hereditarily connected with architecture and building, his grandfather having been a builder in Sheffield, and his father, Mr. William Flockton, an architect in the same town. Mr. Flockton received his professional education in his father's office, and subsequently was for a time in Sir Gilbert Scott's office. He practised at first in conjunction with his father, but in 1862 started a separate practice in partnership with Mr. Abbott, a former assistant of his father; the firm being Flockton & Abbott. In 1878 Mr. Abbott retired and Mr. Gibbs became the junior member of the firm. Subsequently Mr. C. B. Flockton was associated with the firm, which assumed its present style of Flockton, Gibbs, & Flockton.

As senior partner in the firm Mr. Flockton carried out, or was principally concerned in carrying out, a great number of buildings. The one most prominent in the memory of our readers will probably be the Mappin Art Gallery, Sheffield (illustrated in the *Builder* of October 9, 1897 and February 4, 1898). Among many others we may name the following, as having been illustrated in the *Builder* under the dates given in brackets: Sheffield Board Schools, in conjunction with Mr. E. R. Robson (October 9, 1897); Royal Insurance Buildings, *Independent* Offices, and Auction Mart, Sheffield (October 9, 1897). Among his other works at Sheffield were the Littlewood Memorial Hall; premises for Messrs. Cockayne, Market-place; the Sheffield Athenæum; Infectious Diseases Hospital at Lodge Moor; the Savings Bank; the Court House (enlarged); a block of buildings for Sir John Walsh in the High-street; court and magistrates' room and other additions to the old Town Hall; the new Police-court; various residences and large business offices; the large hall of the Cutlers' Hall; the George-street Bank; the Sheffield and Rotherham Bank; and the Sheffield and Hallamshire Savings Bank. He also built a considerable number of churches in the neighbourhood of Sheffield, and restored and altered the parish church. He also laid out the Kenwood Park estate. Mr. Flockton was a Fellow of the Institute of Architects, of which he had been a member of council, and was the first president of the Sheffield Society of Architects and Surveyors. He kept up his practice and his office attendance to the last, until the brief illness which terminated in his death.

GENERAL BUILDING NEWS.

WHITEFIELD'S MEMORIAL CHURCH, TOTTENHAM COURT-ROAD.—On Tuesday was opened the new Whitefield's Tabernacle, built in Tottenham Court-road to commemorate the life and work of George Whitefield. The new church occupies the same site as the old Whitefield's Tabernacle, and is situated on the west side of Tottenham Court-road. The complete scheme contemplated has been divided into two portions, of which the church and buildings now opened for public use are included in the first contract. It consists of a church to accommodate 1,131 worshippers, with a schoolroom under. The church is approached from the Tottenham Court-road by a flight of stone steps with an arcaded portico and an inner vestibule. The number of sittings provided on the ground floor is 588, the remaining 543 sittings being in a wide continuous gallery, upon which also is placed the organ in rear of the rostrum, with the choir adjoining. The plan is that of a nave and aisles, with bold arcades of brick and stone with cast-iron columns supporting a high clearstory. The aisles and clearstory are lighted with circular-headed windows grouped in pairs, and the low-pitched roofs are open to the ridge, with heavy framed ornamental trusses, supported upon cut and framed timber brackets; the surfaces between the purlins are boarded and framed into panels with boldly moulded ribs. The gallery is approached by two stone staircases, entered from the front portico, and treated architecturally as two towers flanking the main entrance, whilst another stone staircase in the rear gives communication between the church and the old schools, and serves also as an emergency exit. The basement under the church forms a schoolroom 59 ft. by 78 ft., extreme sizes, with a platform and approaches from three staircases, and having also emergency exits direct on to the open areas, sanitary accommodation being provided for girls and boys. The remaining buildings eventually to be erected will be in the rear of the present church, with a frontage and two direct entrances in Whitefield-street, and will comprise the minister's vestry and ante-room; the deacon's vestry, 25 ft. by 21 ft.; and the church parlour, 25 ft. by 18 ft. In the basement beneath the vestries will be placed the infants' school, a room 25 ft. by 21 ft., and near it a kitchen and store, also lavatories for ladies and gentlemen. The whole of these basement rooms will be approached directly from Whitefield-street. It is proposed, on the Whitefield-street frontage, and at about the level of the church gallery, to place the lecture hall, 65 ft. long by 25 ft. 6 in. wide, and 13 ft. in height to the plate, with an open-timbered hammer-beam roof and wooden dado. This hall will be approached by the gallery staircase already described as built, and an additional staircase yet to be built, and will have ample cloak-room accommodation in the old school building adjoining, which is brought into communication with the new buildings on all floors. The style adopted is a Victorian rendering of the Free Renaissance of the Netherlands. The facings throughout are of a pleasant coloured sand-faced red brick relieved with warm-hued stone in strings, features, and traceries. The elevation facing the Tottenham Court-road has two square towers flanking the front with a seven-light traceried window between, surmounting an arcaded portico with granite shafts and brick arches keyed with stone. The whole of the executed works have been carried out from the designs and under the superintendence of Mr. Rowland Plumbe, architect, of Fitzroy-square, W., by Messrs. Kingerlee & Sons, of Oxford. The carving has been executed by Messrs. James Forsyth & Sons. The electric light by Messrs. Welch, Fry, & Shelton. The glazing by Messrs. H. J. Salisbury & Co. The heating by Mr. John Grundy. Mr. G. T. Murton has acted throughout as clerk of works.

PROPOSED EXTENSION OF WAKEFIELD CATHEDRAL.—The Bishop of Wakefield presided in the Wakefield Church Institute on the 10th inst. at a meeting of the Walsham How Memorial Committee. Plans prepared by Mr. Frank Pearson, of London, were exhibited, showing details of the extension of the cathedral, which, together with the introduction of a recumbent figure of the late Bishop is the form the memorial is to take. The scheme will involve an expenditure of about 20,700*l.*, and provides generally for an eastward extension of the edifice for about 60 ft., with north and south transepts. Increased length will be given to the choir stalls, and a retro-choir and chapel will afford accommodation for early and occasional services. A chapter-house and vestries are also contemplated. At the meeting it was reported that six shops in Teall-street, adjoining the cathedral, and certain rights of light, had been purchased for 8,250*l.*, in order to enable the extension to be carried out. It was thought that this expenditure was fully justified, as the site will be considerably improved when the shops have been swept away. Sir George Armytage, on behalf of a sub-committee, presented a report as to the recumbent effigy of the late Bishop, and it was agreed to ask two sculptors to prepare designs.

PARISH CHURCH, GROVE, BERKS.—It has been decided to rebuild the parish church at Grove, using some of the materials of the existing church, which is modern. Mr. Philip A. Robson, of London, has been instructed to prepare plans.

CHURCH, HESSAY, YORKSHIRE.—A new church has just been erected at Hessay, within the parish of Moor Monkton. The building has been designed by Mr. Hodgson Fowler, of Durham, and it consists of nave and chancel under a continuous roof, with a vestry on the north side. It is in red brick with stone dressings, a high pitch roof being covered with red Staffordshire tiles. It is lighted by two-light windows on the north and south sides of the nave, two windows on the south side of the chancel, a three-light tracery east window, and a five-light window at the west of the church. The floors are laid with wood blocks on concrete, the chancel floors being tiles. An open bell-turret rises at the west end of the church. The contractor has been Mr. A. Lyons, Norton, Malton, Messrs. T. Walker & Co., West Hartlepool, supplying the wood work, while Mr. T. A. Bolton, York, has acted as clerk of works.

BAPTIST CHURCH, BALSALL HEATH, BIRMINGHAM.—The memorial stones of the new Baptist Church, situate on the new road now being made from Pershore-road to join Edwardes-street, were laid on the 6th inst. The edifice, which will be built of brick with red terra-cotta dressings, will provide accommodation for 700 persons. Attached to the church are vestries for the use of minister and choir, and at the rear is a lecture-hall, capable of accommodating 400 persons. Mr. A. J. Teall is the builder, and the architects are Messrs. Ingall & Sons.

METHODIST CHURCH, BELFAST.—The foundation stones of a new Methodist church on the Oldpark-road were laid on the 4th inst. The church, when completed, will accommodate about 800 persons, seated on ground-floor and gallery, the length inside being 60 ft., and the width 48 ft. An entrance vestibule will communicate with porches at both

sides, from which entry will be made on to the ground floor. Near the entrance will be cloak-room accommodation, and a room that can be used as a class-room for small classes. At the remote end of the building will be the pulpit and choir-gallery, and at the rear, vestry and class-room accommodation will be provided for about fifty. Provision has been made for through communication between the pulpit, galleries, and ground floor, and the class-rooms. The architects for the work are Messrs. J. J. Phillips & Son.

BAPTIST CHURCH, FORD, NEAR PLYMOUTH.—Ford new Baptist Church, which has just been opened, has seating accommodation for 450 people. It is built of red brick, with Polyphant dressings and Doulton stone turrets. The interior has walls of stucco, an open timber roof, and seats of deal with pitch-pine ends. There are two vestries; the windows have lead glazing. In front of the rostrum is the baptistry of glazed brick. Behind the rostrum is the choir gallery, and on the left side is the organ chamber. The architects are Messrs Wiblin & de Boinville, of Plymouth, and the builder is Mr. W. Partridge.

ST. MICHAEL'S PARISH CHURCH, BELFAST.—This church, which is situated off Craven-street, on the Shankill-road, was opened on the 4th inst. It is in the Gothic style, and consists of nave, north and south aisles, chancel, organ chamber, vestry, and lower stages of tower, left unfinished until sufficient funds are in hand for its completion. The material used externally is red brick, with dressings of Dumfries stone. The internal work, including arcades and pillars, is of bathstone. The roofs are stained and unvarnished. The windows are filled with leadwork and cathedral glass by Messrs. Carlisle & Wilson. The woodwork generally is pitchpine, but the prayer-desk, pulpit, and other chancel fittings are of English oak, and have been executed by Messrs. Purdy & Millard. Electric light has been introduced by Messrs. Coates & Co., and the heating is by Messrs. Musgrave. The church, which will accommodate over 900 worshippers, was designed by Mr. Samuel P. Close, and the contract has been carried out by Mr. James Kidd.

ADDITIONS TO ST. JAMES'S CHURCH, TOXTETH, LIVERPOOL.—The foundation stone of a chancel for this church was laid on the 6th inst. The additions to the edifice consist of a chancel 32 ft. by 20 ft., to be fitted up with choir stalls for fourteen men and sixteen boys. The walls are to be lined with red Ruabon bricks, and the floor to be laid with encaustic tiling. The roof will be in panelled pitchpine. There are also to be a new organ-chamber and separate vestries for both choir and clergy, with the necessary sanitary arrangements. The whole of the windows are to be filled in with cathedral glass. The old top gallery is to be removed altogether, and an extra exit and staircase to main gallery are to be provided. The font is to be removed to the west end of the church, and the old organ is to be thoroughly overhauled and placed in the new organ-chamber. The new seats will afford extra accommodation for fifty-three persons. The builder is Mr. William Wood, and the architect Mr. J. H. Havelock Sutton, of Liverpool.

BOARD SCHOOLS, LEES, BRADFORD.—New school premises have been erected by the Haworth School Board at Lees. The new building occupies a site of about 4,000 yds., abutting on the main road to Haworth. The principal feature is the central hall, with class-rooms down each side and at each end. The hall measures 70 ft. by 38 ft., and is 29 ft. high, and has seven high lights on each side over the class-rooms and two lights at each end. Further lighting is obtained through the side class-rooms. Three class-rooms are located on the west side, two on the east, and one at the south end, their dimensions being as follow:—Two, 23 ft. by 21 ft.; three, 26 ft. by 23 ft.; one, 24 ft. by 26 ft. The remaining space at the south end is filled in with rooms for the master and the assistants and by cloak rails and lavatory accommodation. At the opposite end are a cookery-room (36 ft. 23 ft.) and a scullery (13 ft. by 9 ft.). This portion of the premises may be entered by a separate door at the side. The central hall is wainscoted in pitch pine, and the floors are of blocks of pitch pine carried on a bed of cement. The heating throughout is by hot water. To the rear of the building is a "dark" room, where slides may be prepared for use in the school lantern, whilst another feature is a dining-room. The playgrounds are provided with sheds. The contracts have been carried out by the following:—Masons, Messrs. Gott & Co., Lees; joiner, Mr. Ineson Taylor, Lees; plasterers, Messrs. B. Whitaker & Sons, Haworth; plumbers, Messrs. Thomas Lambert & Son, Haworth; slater, Mr. T. Smithies, Bradford; painter, Mr. G. B. Walmsley, Haworth; electrician, Mr. Hugh Spencer, Keighley. Mr. Longbottom (Bingley) the palisading, Messrs. Nightingale (Grimsby) the block flooring, and Messrs. Taylor & Parsons (Bradford) the fire ranges, &c. Mr. E. P. Peterson, of Bradford, has been the architect, and Mr. James Bottomley, of Haworth, the clerk of works.

SCHOOLS, EAST TILBURY.—These schools have just been renovated, and a class-room added to meet the demands of the Education Department and the increase of population in the neighbourhood. The builder was Mr. J. Brown, of Grays, and the architect Mr. P. A. Robson, of London.

PARISH ROOM FOR PARK, SHEFFIELD.—Considerable alterations have recently been made in connexion with St. John's Schools, Cricket Inn-road, Park, Sheffield, and a new portion, which is to serve as a parish room and men's club, was opened on the 9th inst. The basement was used as an infants' day school, accommodating 230 scholars, and a boys' Sunday school, of about 250 members, and the first floor as a junior day school for 200 children, and a girls' Sunday School of about 250. The first floor was provided with a gallery, which occupied the four sides of the apartment, and this has been removed and a floor substituted. The new story will serve as a parish room to accommodate 300 persons, and a set of rooms, to be used as a men's club and institute. The basement and first floor will be utilised practically as before. The work has been carried out by Mr. Joseph Norton, architect, Sheffield.

ST. MARY'S HALL, KEMP TOWN, BRIGHTON.—On the 7th inst., an addition to this building was opened. The annexe contains six class-rooms. The builders were Messrs. J. J. G. Saunders & Co., and the architect was Mr. F. T. Cawthorn.

WESLEYAN CHAPEL, USHAW MOOR, DURHAM.—Memorial stones of a new Wesleyan Chapel at Ushaw Moor, were laid on the 11th inst. The architect is Mr. J. W. Taylor, of Newcastle.

PREMISES FOR THE MANCHESTER GUARDIAN SOCIETY FOR THE PROTECTION OF TRADE.—New premises for the Manchester Guardian Society for the Protection of Trade are in course of erection on a site at 15, Fountain-street. The building is to be of brick and stone, with an elevation to Fountain-street of grey Aberdeen granite, with polished columns and doorway up to the level of the first-floor windows. Messrs. Wilson & Toft are erecting the building, from the plans and under the superintendence of Mr. J. W. Beaumont, architect. The total cost (including 10,000*l.* paid for the land) is estimated at about 21,000*l.*

SANITARY AND ENGINEERING NEWS.

SEWAGE WORKS, ROTHERHAM.—The foundation-stone of the new sewage outfall works of Rotherham was laid on the 8th inst.. For more than a year the Rotherham Corporation have been engaged in carrying out the scheme prepared by Mr. R. E. W. Berrington, of Wolverhampton, and in this period considerable progress has been made in the erection of permanent buildings, and the construction of filter beds on the approved site at Aldwarke, and in laying the necessary mains in the principal streets of the borough. The process to be adopted consists of bacteriological filters and land treatment of the sewage after it has passed through the ordinary subsidence tanks. The whole of the sewage is gravitated to the outfall, where it passes through a series of tanks, and thence to the filters. There is a chamber for the interposition of road detritus. Pressing machinery will also be provided. The contractors are Messrs. A. Braithwaite & Co., of Leeds, and Mr. John T. Dixon is acting as chief assistant to the engineer.

THE DRAINAGE OF EAST NOTTINGHAM.—Mr. E. A. Sandford Fawcett recently held a Local Government Board inquiry at the Guildhall, Nottingham, concerning an application of the City Council to borrow 10,000*l.* for the extension of the Beck Valley storm-water culvert. Mr. A. Brown is the City Engineer.

FOREIGN.

FRANCE.—M. Cazin has been at work for some months at the completion of the paintings by Puvis de Chavannes which are to be placed in the Panthéon, above the last frescoes of the deceased master. He is following closely the indications pretty clearly given by the original artist.——M. Sauvageot, the architect in charge of the old church of Saint Pierre, Montmartre, has found at the foot of the piers the remains of a Merovingian burial-place.——The "Vieux Paris" Committee has reported in opposition to the proposed enlargement of the Bourse, but it is not likely that the Municipal Council will in such a case give any weight to the opinions of archæologists.——A new Central School of Arts and Manufactures is to be built at Lyons.——The death is announced of M. Croisy, the sculptor, at the age of fifty-nine. He was a pupil of the Ecole des Beaux-Arts, and obtained, in 1863, the second Grand Prix de Rome. He made his début at the Salon of 1867 by a bas-relief, "Fondation de la Ville de Marseille," which attracted much attention. Among his subsequent works are the "Prière d'Abel" (1868), "Une Néreide" (1869), "Psyche" (1870), and in 1873 a design for an allegorical monument, "L'Invasion," which procured him a medal. At the 1878 Exhibition his group of "Paolo and Francesca" was much admired. We may mention also among his work, the "Fille aux Raisins" exhibited at the 1878 Salon, a statue which decorates the façade of the Mairie of the IXth Arrondissement; "Le Nid," exhibited in the Salon of 1882, and which is at the Luxembourg, and many decorative figures in the vault of the Salle des Fêtes of the Paris Hôtel de Ville. We owe to Croisy also the monument erected at Mans to the memory of General Chanzy, and that of the Defence of Bazeilles. He was a Chevalier of the Legion of Honour, and obtained a "Première Medaille" in the Salon of 1885.

SINGAPORE.—The Diamond Jubilee Permanent Memorial scheme, after two and a half years' struggle, is no further advanced than it was when first suggested. Some few months ago we reported that the committee had come to the conclusion that the site originally selected was not suitable and that the scheme approved of was too costly. It was then decided that Messrs. Swan & Maclaren, of Singapore, be instructed to prepare sketch-plans for a new Town Hall and theatre as nearly as possible upon the lines laid down in the original instructions, but to be built upon a better site, and the cost of which was to come within the funds at the disposal of the committee. The firm above mentioned did this, but at the meeting when their plans were to be considered it was announced that the Municipal Commissioners had declined the undertaking, which was that they were to be allowed to take over the present Town Hall, for which they were to pay the Jubilee Fund 120,000 dols. and convert it into Municipal offices. This was a serious blow to the Fund, as it represented nearly 30 per cent. of the available funds, making it not only impossible to carry out the new scheme, but meaning a loss of some 10,000 dols. spent on new plans and preparation of site. It was then proposed by the Municipal representative on the committee that Messrs. Swan and Maclaren be instructed to report upon the possibility of adding to and converting the existing Town Hall to meet the requirements of the present scheme, and be requested to select a suitable site for a theatre of cheap construction. This was put to vote and lost by a majority of one; and at the next meeting of the Legislative Council, Sir Alex. Swettenham, Colonial Secretary, and a member of the committee, moved that the committee be instructed to return the money to the contributors, but this was ruled out of order. Since then, the editor of the *Free Press*, who is a member of the committee, has been to the expense of obtaining professional advice as to the possibility of carrying out his scheme, namely the adoption of the present building by adding to it, the result being that experts agree that his scheme can be carried out with the money at the disposal of the committee, and will give more accommodation than the committee ask for, and that upon what is unquestionably the finest site in the town. Later we learn that a member of the committee has still another scheme, which adopts the land adjoining the present building as a site, and while following the lines of the before-mentioned, includes the theatre in the same block of buildings. This scheme provides an excellent Second Court (a thing very greatly needed, and at present being asked for by the members of the bar), as well as giving to the Government suitable land for future extensions of the Public Offices.

The railway from Singapore to Johore has at last been sanctioned and is in a fair way of being carried out. The Consulting Engineers have altered the plans considerably, but in the main approved of the scheme, and are shortly sending out a staff of engineers to carry out the work. Considerable dissatisfaction is felt by the public that the line should be allowed to cross the principal roads and entrances to houses so often by means of level crossings, and damage to horses is expected. However, the construction is not yet started, and hopes are entertained that these shortcomings may be rectified. The line will be a metre gauge line, the gauge being adopted presumably with the view of ultimate junction with the line in the Malay Peninsula.

A building disaster of a somewhat grave natur occurred on October 1, resulting in the death of one person and the injuring of eight others, and which, had it happened on a week-day, must have been much more disastrous. It was due to the collapse of a party wall between two shops, but up to the present the cause of the failure is not certain, though an examination of the wall shows that it was constructed with little attempt at bond, as it consisted of three parallel rows of stretchers with a course of headers every nine courses built with a kind of loam.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The firm of C. & L. Ower, architects and civil engineers, Dundee, has been dissolved by mutual consent.

THE NATIONAL ASSOCIATION OF MASTER PLUMBERS.—The half-yearly conference of the National Association of Master Plumbers of Great Britain and Ireland was held on the 8th inst. at the Hotel Metropole, Leeds. The chair was taken by Mr. John Skirrow (Leeds), President of the Association. About 150 delegates were present, representing the following districts:—Bradford, Birmingham, Manchester, Newcastle, Sheffield, Huddersfield, Halifax, Hull, Oldham, Rochdale, York, Leicester, Shipley, Rotherham, Derby, Matlock, Otley, Batley, Lincoln, Milford, Stockport, Idle, Bolton, and other districts. The delegates were welcomed by Mr. H. Lindley (vice-president of the Leeds Association). The welcome was acknowledged by Mr. W. H. Smith, of Hull. The Hon. Secretary (Mr. John Beal), after the minutes of the Wolverhampton and Sheffield Central Board meeting had been read, gave a brief report of

the Association's work during the past half-year.—Mr. A. B. Dyson (Halifax), Hon. Treasurer, in presenting the financial statement, stated that during the past half-year there had been seventy new members.—Mr. W. Jaffrey, of Manchester, reported that a short time ago the plumbers in that city had asked for an advance of ½d. per hour, and the advance was conceded. There was likely to be peace in the trade in Manchester for some time to come.—Mr. J. Osbourn stated that in Birmingham the trade was satisfactory, and Mr. R. W. Cooke gave a similar report of Newcastle, while Mr. W. H. Smith explained that although there was a little trouble in Hull, it might be soon settled.—The President, in his address, stated that the Conciliation Board had been called together three times during the half-year—at Hull, Stockport, and Oldham. At Stockport matters were settled amicably, but at Hull and Oldham negotiations had not been so successful. The relationship of the Master Plumbers' Association with the Master Builders' Association, both national and local, was not as satisfactory as it might be. The building trade in Yorkshire especially had been in a most unsettled state the whole of the past summer, first by the plasterers' lock-out, and afterwards by the order of the Yorkshire Federation of Building Trades Employers to lock out 25 per cent. of all the other trades. This had brought about the strike of the London Order of Bricklayers, and placed the plumbers in Leeds and other towns in a very unsatisfactory position, as the year before the Leeds district joined the Leeds Building Trades Employers' Federation, which was governed by a Conncil then consisting of three delegates from each branch of the building trade, so that each trade had fair representation. They were afterwards federated to the Yorkshire Federation of Building Trades' Employers with the distinct understanding that they, as plumbers, should first obey the orders of their own National Association, and also retain the right to manage their own affairs. At the annual meeting in Wolverhampton in May last, they had passed a resolution not to lock out any of their men. But this placed them in a difficult position, and they therefore decided to resign from the Federation until such time as a proper scheme could be adopted giving equal representation to all the trades. His own idea of federation was that each section of the building trade should have its own national Association, and that from the executive of each national association should be elected a council or standing committee with equal representation, so that the National Federated Council of Building Trades' Employers would voice the whole of the building trade throughout the country. Yet each trade would still continue to manage its own particular trade affairs. Until something of this kind was adopted, it would, he thought, be wise if all their members did not join any builders' association, but stand firm by their own national organisation, which he felt sure would be of more benefit to them.—On the invitation of Mr. W. H. Mallender, it was agreed to hold the Central Board meeting at Manchester. Liverpool was chosen for the annual meeting in 1900. Mr. J. Osbourn (Birmingham) presented a draft of a mutual insurance scheme. It was, he said, on the lines recommended by Mr Chamberlain to the manufacturers of Birmingham. The President suggested that the representatives of Birmingham, who have had the matter under consideration, and the Executive of the Association, should be appointed a Joint Committee to go thoroughly into the matter, and this suggestion was adopted. The Oldham delegates presented a scheme for making the claims of the Association better known. The scheme was remitted to the consideration of the Executive. At the conclusion of the day's business presentations were made to the hon. secretary (Mr. J. Beal), Mr. W. H. Smith (Hull), vice-president, and Mr. W. H. Harrison (Hull), in recognition of their past services to the Association.

EXAMINATIONS FOR SANITARY INSPECTORS.—The next examination for sanitary inspectors under the Public Health Act will be held at the Examination Hall, Victoria Embankment, in December; the preliminary examination on December 5, and the technical examination on Thursday, Friday and Saturday, December 7, 8, and 9.

PUBLIC IMPROVEMENTS, LANCASTER.—Alderman Wm. Bell, Mayor of Lancaster, laid the panel stone, on the 8th inst., of the new bridge over the canal, which is part of the south-end improvements. Mr. J. Cook is the engineer, and the contractors are Mr. W. Harrison, Lancaster (masonry), and Messrs. Homan and Rodgers, Manchester (ironwork). The Mayor, having laid the stone, affixed to which was an inscription plate, explained that the improvement was initiated in 1892, when power was obtained to construct a street through Prince William Henry field to connect Penny-street with Thurnham. The new street was 40 ft. wide, and the new bridge at the narrowest point would be 60 ft. wide. The old bridge was 34 ft. wide. Two public-houses would be set back 4 yards, making Penny-street 50 ft. wide, instead of 32 ft.

PUBLIC IMPROVEMENTS, HANLEY, STAFFORDSHIRE.—On the 7th inst., Major-General Crozier, R.E., an inspector of the Local Government Board, held an inquiry at Hanley, with respect to an application by the Town Council for sanction to borrow 18,865*l.* for various public purposes. The Town Clerk, Mr. A. Challinor, explained that of the amount proposed to be raised on loan 5,930*l.* was required for additional sewerage works and buildings. As to the electric lighting they asked 4,000*l.* for the extension of the mains and transformers, and 1,000*l.* for electricity meters and fittings. It was stated that the balance of the proposed loan was made up as follows:—2,200*l.* for the purchase of land for town improvements; 930*l.* for purchase of land at Sandy Finney Farm, where it was intended to build a refuse destructor; 300*l.* for the widening of the Trent Bridge in Fenton-road; 500*l.* for the purchase of a steam roller and road scarifier; 2,000*l.* for paving street carriage-ways; and 2,000*l.* for the purchase of land for the extension of the cattle market and town yard. The Borough Surveyor is Mr. Joseph Lobley, and the electrical engineer, Mr. C. A. Cowell.

ELECTRIC LIGHTING, &C., WARRINGTON.—Major-General D. Crozier, R.E., held a Local Government Board inquiry in the Town Hall, Warrington, on the 8th inst., respecting an application of the Corporation for sanction to borrow 44,966*l.* for purposes of electric lighting, and 9,336*l.* for the provision of a central sanitary depôt at Parr-street.—The Town Clerk (Mr. J. Lyon Whittle) stated that in 1898 Mr. A. H. Preece was instructed to report upon an electric lighting scheme for Warrington, and it was upon his report that the present application was based. A central site had been acquired comprising five acres, and the price paid was 452*l.* per acre. It was intended to use 12,480 square yards for electric lighting purposes, and 3,065 for a central depôt, and the Corporation had under consideration the advisability of using the remainder for a public abattoir. It was intended to use twenty-seven arc lamps for street lighting. Mr. A. H. Preece gave details of the scheme.—Mr. Deas, sanitary engineer, gave evidence as to the proposed central depôt to be erected near the electric lighting station. It was intended to erect two refuse destructors. The steam raised would be utilised in connexion with the electric lighting station.

REREDOS, ST. MARY'S CHURCH, LEICESTER.—The memorial reredos erected in St. Mary's Church, in memory of the late Mr. Luke Turner, was dedicated on the 11th inst. The reredos was designed by Mr. G. F. Bodley, A.R.A., Diocesan Architect

BRITISH FIRE PREVENTION COMMITTEE.—An important series of fire tests, with floors, partitions, and doors, took place on Wednesday at the British Fire Prevention Committee's Testing Station at Regent's Park. The international character of the committee's work may be seen from the fact that three of the tests were of materials of French manufacturers, whilst among the few special visitors were Herr Muthesius (the technical Attaché to the German Embassy) and Commandant Welsch of Ghent (representing the Belgian fire authorities). The French floor, partitions, and girder coverings, made of a material called "Gypsine," were subjected to tests of an hour's duration, the temperatures ranging as high as 1,800 deg. Fahr., and were followed by the application of water, the floors, of course, being loaded. Some oak and walnut doors were tested for fifty minutes, at temperatures up to 2,000 deg. Fahr. The results of these tests will be issued in due course. The tests, it might be of interest to add, were conducted according to the usual procedure, Mr. Arthur Cates (late Crown Surveyor) and Mr. Gundry (President of the District Surveyors' Association) representing the Council; Mr. Edwin O. Sachs (Chairman) and Mr. F. R. Farrow, representing the Executive, Messrs. Max Clarke, Ellis Marsland, Chas. E. Goad, F. Hammond, and Robert Mond having charge of the tests.

NOTTINGHAM BUILDING TRADES COUNCIL.—The annual dinner of the Nottingham and District Building Trades Council was held at the Three Tuns Inn, Warser-gate, on the 9th inst. The President, Mr. J. Weightman, presided. Mr. G. Goff proposed "The Building Trades Council," and said it was necessary that they should combine together, as they knew that one individual trade could not carry a movement forward. Mr. W. H. Bishop, the secretary, responded. Other toasts included "The Visitors," proposed by Mr. Phipps, and "Prosperity to the City and its Trades," proposed by Mr. J. O. Oxley, and responded to by Mr. Powell.

THE ARCHITECTURAL PROFESSORSHIP AT KING'S COLLEGE.—The Council have appointed Mr. R. Elsey Smith, A.R.I.B.A., to the chair of Architecture and Building Construction. With respect to this matter, there appears to be a report going about that the Editor of this journal was one of the applicants for the chair. We beg to say that this is not the case.

LECTURE ON THE TOWER OF LONDON.—On Monday last Mr. Henry B. Wheatley gave a lecture at the London Institution on "The Tower of London." His opening remark that all are antiquaries now seemed justified by the full attendance in the lecture hall. London has many monuments of surpassing interest, and though there is much desecration by the restless hand of modern improvement, there is, and always will be, much left of interest. The lecturer claimed the first place of interest for the Tower of London. "Why," he asked, "was it called the 'Tower of London,' and not, as is usually the case, the Castle?" It seems that there were two kinds of fortified places in mediæval times. The Roman castrum or castellum survived in the fortified enclosure, the mediæval "motte" or "tour" in the central keep. When the town coalesced with the castellum, a name was required for the outer fortress—either tour (*turris*) or chastel (*castellum*)—which was to prevail? Sometimes the keep was added to the castle, sometimes the castle to the keep. Generally "castle" has prevailed, but the respective strongholds in the capitals of Normandy and England were the Tour de Rouen and the Tower of London. The first Constable of the Tower was Geoffrey of Mandeville, Constable of the Tower of London and its appendant castle. With regard to its antiquity, there are Saxon remains in the walls, and the Romans, of course, left their mark upon it. In support of this, the lecturer quoted from Richard III., act iii., sc. 1:—

"*Prince Edward:* I do not like the Tower of any place. Did Julius Cæsar build that place, my lord?

"*Gloucester:* He did, my gracious lord, begin that place; which, since, succeeding ages have re-edified.

"*Prince:* Is it upon record? Or else reported successively from age to age, he built it?

"*Buckingham:* Upon record, my gracious lord."

The records, however, have not yet been found. It is essentially Norman, as we know it now. Its present area is 26 acres. The moat was made in 1191 by William Longchamp, Bishop of Ely. Henry III. made a quay and the watergate and had the keep whitewashed. The lecturer dealt with the Tower under three heads—as a fortress, a palace, and a prison. To the present day it is still a fortress. The kings, from William the Conqueror to Charles II., used it as a palace. George T. Clark says:—"The strong monarchs employed the Tower as a prison, the weak ones as a fortress." As the standard of comfort increased, the kings and queens found it more agreeable to dwell at Whitehall, and the security of the kingdom made it unnecessary for them to seek a refuge in the Tower. It would have been interesting to have had the history of Sir Christopher Wren's connexion with the restoration of the keep. The lecture was very fully illustrated with beautiful lantern slides.

CAPITAL AND LABOUR.

LEEDS BUILDING TRADE DISPUTE.—The differences existing between the Leeds Master Builders' Association and the local branch of the London Order of Bricklayers have been satisfactorily adjusted. It will be remembered that in May last the men applied for an advance of a penny an hour, which the masters refused to grant. Since then representatives of both sides have met in conference, but without arriving at any agreement, the men declining to accept an offer of 9½d. per hour, being an advance of one halfpenny. However, a deputation consisting of three members of the order waited upon the committee of the Masters' Association at the Builders' Exchange Club, Duncan-street, and intimated their willingness to take the proffered increase. A deputation of three members of the Manchester Order of Bricklayers, who recently gave notice for a halfpenny advance, were also received, and it was resolved to accede to the request. The increased wages will, therefore, be paid to the members of both orders from May 1 next. Both deputations also consented to abide by the 1896 rules. The meetings were presided over by Mr. W. H. Dews, President of the Builders' Association.

EDINBURGH AND LEITH OPERATIVE PLUMBERS.—A mass meeting of Edinburgh and Leith Operative Plumbers was held on the 9th inst. in the Oddfellows' Hall, Forrest-road, to consider the apprentice clause of the by-laws which, with the single exception of this clause, were mutually adjusted after the recent dispute between the operatives and the masters. Mr. James Reekie, who presided, said they had drawn up a rule which seemed to suit the men's committee and the committee of the employers, but which, when referred to the general body of the employers, had been rejected by them as unworkable, and the employers suggested that the clause referring to apprentices should be allowed to remain as at present. The Secretary (Mr. Thomas Scott) read the clause as altered and passed by both committees. It was in effect that apprentices should serve six years. At the end of that period, if necessary, they should be examined by a board composed of two employers and two operatives. Apprentices successful in the examination should be declared fully-qualified journeymen, and as such be entitled to a wage of not less than 6d. per hour. Those unsuccessful had the option of working another year as improvers at a wage of less than 6d., and they might come up again for examination on certain specified dates. After discussion a motion was made that the proposed alterations be abolished and the apprentice clause be allowed to stand as before. Against this, an amendment was proposed that the examination section of the clause be withdrawn, and, failing acceptance of the clause by the masters with this curtailment, that the whole question be submitted to arbitration. On a show of hands being taken the amendment was carried by a large majority.

LEGAL.

KENSINGTON BUILDING DISPUTE.

MR. JUSTICE FARWELL in the Chancery Division on the 7th inst., delivered judgment in the case of Rogers *v.* Hosegood, an action brought by the trustees of the will of the late Sir John Millais as owners of property in Palace Gate, and G. M. Rogers, the owner of adjoining property, for the purpose of enforcing restrictive covenants against the defendant, the owner of property known as Thorney House, Palace Gate, on which he proposed to build a large block of residential flats. On May 31, 1869, the then Duke of Bedford purchased a plot of land, which was part of the property to which the action related, from Messrs. Cubitt & Co., and covenanted to erect thereon not more than one dwelling-house which was to be used for a private residence only. On July 31, 1869, the Duke purchased an adjoining plot upon similar conditions, except that there was no restriction as to the number of houses to be built upon it. These covenants were expressed to be intended to enure for the benefit of Messrs. Cubitt & Co., or persons claiming under them, for any of their lands adjoining the property purchased by the Duke. The Duke afterwards bought another adjoining plot of land, with respect to which no covenants were entered into. Sir John Millais bought his property from Messrs. Cubitt & Co. in 1873, and built a house upon it. The conveyance to him contained no express assignment of the benefit of the covenant entered into by the Duke. The Duke died in 1872, and in order to enable his successor to dispose of the Thorney House property more freely Messrs. Cubitt & Co. in 1876 released him so far so they could from the covenant relating to the number of houses to be built on the property. The plaintiff Rogers was one of the firm of Cubitt & Co., and he purchased his property from the firm after the date of the release. The defendant purchased his property from the Duke's devisees. Mr. Williams, the defendant's architect, explained that it was not intended there should be any portions of the building common to the use of the tenants except the hall, courtyard, and staircases, and that none of the flats were intended to open directly into the street. The flats were intended to open on to staircases leading down to an open courtyard surrounded by cloisters intended to enable the tenants to get to the front entrance dryshod.

In the result Mr. Rogers' action was dismissed, but on the claim of the other plaintiffs the defendant was restrained from building in the way he suggested, and was ordered to pay half the general costs of the action.

WHAT IS A NEW STREET?

AT West London Police-court, on the 8th inst., Mr. Lane gave judgment on an adjourned summons at the instance of the Fulham Vestry to recover the apportioned sum from Messrs. Simmons Bros., builders, for making up Fulham Palace-road, an old parish highway which, it was contended, had become a new street. There were other summonses for the recovery of other sums standing over for the magistrate's judgment. Mr. Blanco White represented the Fulham Vestry, and Mr. A. B. Watson appeared for the defendants. Mr. Lane said that he was of opinion that Fulham Palace-road became a new street in 1883, the gradual process of house building on the east side commencing in the previous year and continuing down to 1896. The contention was that it was not a new street until houses were built on both sides, but it had been expressly decided by two authorities that buildings on one side were sufficient to constitute a new street. With reference to the time, he found that there had been periods ranging from twenty to thirty-five years, so that in the present case sixteen years formed a modest period in the character of a new street. He also found that the repairs to the road were executed by the vestry as surveyors of the highway, and were never intended to relieve the frontagers. He decided in favour of the vestry and made an order for the payment of the money. Replying to Mr. Watson, the magistrate said that with regard to the question of reasonable time, he found on the point of law against him.

CASE UNDER THE WORKMEN'S COMPENSATION ACT, 1897.

THE case of Edwards *v.* Perell came before the Court of Appeal, consisting of Lords Justices A. L. Smith, Collins, and Vaughan Williams, on the 11th inst., on the appeal of the defendant from an award of the learned County Court Judge of Birmingham, who had, under the Workmen's Compensation Act, 1897, awarded the plaintiff, a labourer in the employ of the defendant, a builder, 10s. a week for injuries received whilst the plaintiff was taking off timber from a saw-mill, such timber being fitted to the saw by the foreman. It appeared that the plaintiff took a lathe to clear sawdust from below the saw, and the lathe not being sufficiently strong it broke, and the plaintiff's hand was caught in the draught of the saw and injured.

Mr. Pickett, for the employer (the defendant) argued that the injury was not received "on or about the plaintiff's employment," and that he had no business to interfere with the saw or sawdust, his duties being solely restricted to taking off the cut timber from the saw.

Their Lordships in the result, without calling upon Council for the respondent (plaintiff), dismissed the appeal with costs.

CASE UNDER THE BUILDING ACT.

AT the South-West London Police-court Mr. Garrett has just given a decision on the Building Act on a summons which the London County Council issued against the Wandsworth and Putney Gas Company for unlawfully erecting a building which was within 20 ft. of the highway.

Mr. Daldy (instructed by Mr. Chilvers) appeared for the Council, and the Gas Company were represented by Lord Robert Cecil, Q.C.

The point in the case was whether the Common Law Act overruled the private Acts of the company. In this case the gas company was incorporated under three Acts, in one of which they were specifically "empowered to erect such buildings as they thought fit" on certain land scheduled in the Act. Accordingly, they had erected a new purifying house on the edge of their property.

Mr. Daldy argued that, despite the private Acts, the company were in the same position as a private landowner, and were amenable to the provisions of the Building Act.

Lord Robert Cecil contended that the private Act gave the company a specific exemption, and cited several decided cases, including those of the London and Blackwall Railway Company and the Limehouse Board of Works in support of his contention.

Witnesses were called proving that it was absolutely necessary for the supply of gas that the purifiers should be erected, and they had been so erected on land mentioned in the schedule.

Mr. Garrett, in giving his judgment, said in the first place he found as a fact that the new building was necessary in the sense that the company would be prejudiced in the supply of gas if they were not allowed to utilise the whole of their space. He was bound by the decided cases quoted by Lord Robert Cecil, and in face of these he dismissed the summons and ordered the payment of 10*l.* 10s. costs.

MEETINGS.

FRIDAY, NOVEMBER 17.

Architectural Association Discussion Section.—Mr. R. Williams on "Tenement Houses for the Working Classes." 7 p.m.

The London School of Economics and Political Science.—Mr. Hirst on "Recent Developments of the Law Relating to Drainage." II. 7 p.m.

SATURDAY, NOVEMBER 18.

Dundee Institute of Architecture.—Visit to villa in West Ferry.

MONDAY, NOVEMBER 20.

Royal Institute of British Architects.—Dr. A. S. Murray on "Excavations in Cyprus in 1896." 8 p.m.

Society of Arts (Cantor Lectures).—Mr. H. H. Cunynghame on "Enamelling upon Metals." I. 8 p.m.

University College, Gower-street.—Dr. S. Rideal on "Sewage and its Purification." III. 5.30 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Inspection at the Metropolitan Cattle Market, York-road, N.

Leeds and Yorkshire Architectural Society.—Smoking Concert, Address by the President (Mr. W. Carby Hall), and Distribution of Prizes. 6.30 p.m.

TUESDAY, NOVEMBER 21.

Institution of Civil Engineers.—Papers to be further discussed: (1) "The Waterloo and City Railway," by Mr. H. H. Dalrymple-Hay; (2) "The Electrical Equipment of the Waterloo and City Railway," by Mr. Bernard M. Jenkin. 8 p.m.

Society of Designers.—Mr. Richard Lunn on "Design for Pottery." 8 p.m.

Architectural Association of Ireland.—Mr. Anthony Scott on "Round Towers of Ireland." 8 p.m.

WEDNESDAY, NOVEMBER 22.

Society of Arts.—Mr. D. E. Hutchins on "National Forestry." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Lecture by Dr. W. A. Bond. 8 p.m.

Edinburgh Architectural Society.—Debate on the Royal Institute of British Architects. 8 p.m.

THURSDAY, NOVEMBER 23.

Society of Arts (Foreign and Colonial Section).—Mr. J. Ferguson on "Old and New Colombo." 4.30 p.m.

Institution of Electrical Engineers.—(1) Mr. John Holliday on "The Cost of Steam Raising." (2) Mr. R. E. Crompton on "Influence of Cheap Fuels on the Cost of Electrical Energy." 8 p.m.

FRIDAY, NOVEMBER 24.

Architectural Association.—Sir Thos. Wardle, K.B., on "Art as Applied to the Weaving and Printing of Textile Fabrics." 7.30 p.m.

Institution of Mechanical Engineers.—Lord Charles Beresford on "Openings for Mechanical Engineers in China." 8 p.m.

The London School of Economics and Political Science.—Mr. Hirst on "Recent Developments of the Law Relating to Drainage." III. 7 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. W. Hope on "The Hygiene of Byres, Lairs, Cowsheds, and Slaughter-houses, and all places where animals destined for the supply of food are kept, and the Hygiene of Markets, Dairies, and other places where food is stored, prepared, or exposed for sale, and transported." 8 p.m.

Glasgow and West of Scotland Technical College (Architectural Craftsmen's Society).—Discussion on "Glasgow Building Regulations," to be opened by Mr. R. W. Horn. 8 p.m.

SATURDAY, NOVEMBER 25.

London and Provincial Builders' Foremen's Association (Memorial Hall Farringdon-street, E.C.).—Mr. A. S. E. Ackermann, A.M.Inst.C.E., on "Thoroughness." 8.30 p.m.

PRICES CURRENT OF MATERIALS:

WOOD.*

Per Petersburg standard hundred.

	£ s. d.	£ s. d.
White Sea: first yellow deals	17 15 0	18 15 0
Second do.	14 0 0	15 10 0
Third do.	12 5 0	13 10 0
Battens, 40s., 30s., and 15s. less respectively.		
Petersburg: first yellow deals	14 10 0	17 0 0
Second do.	11 10 0	13 0 0
Battens, 30s. and 20s. less respectively.		
Petersburg, white deals	10 10 0	12 10 0
Do. white battens	9 0 0	10 0 0
Riga, white deals	9 0 0	10 0 0
Swedish mixed yellow deals	14 0 0	17 10 0
Third do.	13 0 0	15 10 0
Fourth do.	11 10 0	12 10 0
Fifth do.	10 10 0	11 10 0
Battens, 30s., 20s., and 10s. less respectively.		
Whitewood, 10 to 20 per cent. less.		
Finnish unsorted yellow deals	10 10 0	11 0 0
Battens, 10s. and 5s. less respectively.		
Whitewood, 5 to 10 per cent. less.		
Norwegian second yellow battens	8 0 0	8 10 0
Third do.	7 10 0	8 0 0
Fourth do.	7 0 0	7 10 0
Whitewood, 10s. less.		
Danzig, Crown Deck deals, per 40 ft. 3 in.	0 15 0	1 5 0
Brack	0 12 0	1 0 0
St. Lawrence Pine deals, &c., per P.S.H.:—		
1st, Bright and Dry, regular sizes	20 0 0	27 0 0
" " oddments	13 0 0	20 0 0
2nd " regular sizes	15 0 0	17 10 0
" " oddments	10 0 0	14 0 0
3rd " regular sizes	9 0 0	11 0 0
" " oddments	7 10 0	9 10 0
4th " regular sizes	8 0 0	9 0 0
" " oddments	7 0 0	8 10 0
St. Lawrence Spruce deals, &c.		
First, regular sizes	9 0 0	11 10 0
Second "	8 10 0	9 0 0
Third "	8 0 0	8 10 0
Fourth "	7 10 0	8 0 0
Oddments and battens at 20s., 10s., 7s. 6d., and 5s. less respectively.		
New Brunswick Spruce deals, &c.	7 15 0	8 10 0
Oddments, battens, and fourths	7 0 0	8 0 0
United States pitch pine planks and boards	9 0 0	12 10 0
Prepared Boards, per square		
1½ by 6½ and 7 in. 1st yellow	10 0	15 0
" " 2nd "	9 0	11 0
1 by 6½ and 7 in. 1st "	9 6	11 0
" " " white	7 6	9 6
" " 2nd yellow	7 6	9 6
" " " white	6 0	7 6
⅞ by 6½ & 7 in. 1st & 2nd yellow	7 6	8 6
" " " white	7 0	8 0
⅞ by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded)	7 6	8 0
⅞ by 6½ and 7 in. 2nd yellow and white (ditto)	7 0	7 6
⅝ by 6½ and 7 in. 1st yellow and white (ditto)	5 6	6 6
⅝ by 6½ and 7 in. 2nd yellow and white (ditto)	4 6	5 6
Narrower widths at 10 per cent. less. 3rd quality at 15 per cent. less than 2nd.		
Danzig and Memel Fir Timber— per load		
Best middling	3 15 0	4 0 0
Good middling and Second	3 5 0	3 10 0
Common middling	3 0 0	3 5 0
Undersized	3 0 0	3 5 0
Swedish and Norwegian Balks	2 10 0	2 15 0
Baltic Oak Timber—		
Danzig and Stettin—Large	3 5 0	4 5 0
Small	2 10 0	3 5 0
Quebec Timber per load		
Yellow Pine	5 5 0	7 0 0
Oak	4 10 0	6 10 0
Elm	5 0 0	5 10 0
Ash	4 5 0	5 0 0
Birch	2 15 0	4 15 0
New Brunswick, &c., Birch	2 10 0	3 0 0
American Pitch Pine Timber	3 17 6	4 10 0
Wainscot, per log, 18 cubic ft.—		
Crown (Eng. & Dutch) } nominal	4 5 0	5 15 0
Brack } nominal	3 10 0	4 10 0
Lathwood, per cubic fathom—		
Petersburg	4 0 0	6 10 0
Riga and Danzig	4 10 0	5 10 0
Norway Poles, per ft. run	0 0 1	0 0 1½
Oak Staves, per mille full size pipe		
Memel, Crown	210 0 0	220 0 0
Brack	180 0 0	190 0 0
Danzig	165 0 0	175 0 0
Bosnia, single Barrel (nominal)	28 0 0	30 0 0
United States, Pipe	35 0 0	42 10 0
Hogshead, extra heavy and double extra	27 10 0	32 10 0
Indian Teake per load	11 0 0	16 10 0
British Guiana Greenheart	7 0 0	8 0 0

* The prices named are for the wood as imported and landed in the docks. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

PRICES CURRENT—*continued.*

	£	s.	d.	£	s.	d.
Mahogany, per foot superficial—						
Honduras, cargo average	0	0	5	0	0	6½
Nicaragua, do.	0	0	4½	0	0	5½
Tabasco, do.	0	0	4½	0	0	6½
Mexican, do.	0	0	4	0	0	4½
Panama, do.	0	0	3	0	0	4
African, do.	0	0	3½	0	0	5½
Cuba, do.	0	0	6	0	0	8
St. Domingo, do.	0	0	5	0	0	7½
Do. Curls (good to prime)	0	0	9	0	1	3
Walnut, American (logs)	0	2	3	0	4	6
Do. do. (planks and boards)	0	2	0	0	7	6
Italian, per foot superficial	0	0	3	0	0	7½
Black Sea, per ton	6	0	0	12	0	0
Satin Walnut (logs) per foot cube	0	1	0	0	1	3
,, (planks and boards)	0	2	0	0	2	9
Sequoia (Californian redwood), per foot cube	0	1	9	0	2	0
Whitewood, American (logs)	0	1	3	0	1	6
,, ,, (planks and boards)	0	1	6	0	2	9
Quartered oak ,, ,, ,,	0	2	3	0	4	0
Kauri pine (logs)	0	1	9	0	2	0
,, ,, (planks)	0	2	3	0	2	9
Jarrah (planks)	0	2	0	0	2	3
Lancewood spars each, fresh and large	0	5	0	0	8	0
Lancewood spars, ordinary to fair	0	4	0	0	5	0
Degame spars	0	8	0	0	10	0

METALS.

Iron—Pig, in Scotland ton	3	12	1	0	0	0
Bar, Welsh, in London	9	0	0	9	15	0
Do. do. at works in Wales	8	10	0	9	0	0
Do. Staffordshire, in London	9	15	0	11	15	0
Copper—British cake and ingot	77	10	0	78	10	0
Best selected	79	0	0	80	0	0
Sheets, strong	83	0	0	84	0	0
Chili bars	72	15	0	0	0	0
Yellow Metal lb.		7d.			7½d.	
Lead—Pig						
Spanish ton	17	0	0	0	0	0
English Com. Brands	17	5	0	0	0	0
Sheet, English, 6 lbs. per sq. ft. and upwards	19	0	0	0	0	0
Pipe	19	10	0	0	0	0
Zinc—English sheet ton	26	0	0	0	0	0
Vieille Montagne	27	0	0	0	0	0
Spelter	20	17	6	21	2	6
Tin—Straits	123	7	6	0	0	0
Australian	123	12	6	124	0	0
English Ingots	127	0	0	128	0	0
Banca	0	0	0	0	0	0
Billiton	0	0	0	0	0	0

OILS.

Linseed ton	21	17	6	0	0	0
Cocoanut, Cochin	29	15	0	0	0	0
Do. Ceylon	25	15	0	0	0	0
Palm, Lagos	27	10	0	0	0	0
Rapeseed, English, pale	24	0	0	0	0	0
Do. Brown	22	10	0	0	0	0
Cottonseed ref.	19	0	0	20	0	0
Oleine	17	5	0	19	5	0
Lubricating U.S.	0	7	6	0	9	6
Do. Black	0	6	6	0	8	3
Tar—Stockholm barrel	1	6	6	0	0	0
Archangel	1	0	0	0	0	0
Turpentine	38	0	0	0	0	0

RECENT PATENTS:

ACCEPTED SPECIFICATIONS.

Open to Opposition until January 8.

[1898] 16,401, Preble, Lathes or Machines for Turning or Shaping Wood, &c. 20,712, Wadsworth, Street Cleaning Machines. 23,040, Giussani, Crisp, & Grice, Machine for Imparting a Helical Twist to Metal Wire or Laths. 23,126, Nieweth, Heating Air or Gases. 23,305, Shone & Ault, Raising Sewage and other Liquids by Direct Air Pressure. 24,264, Hirst, Switch for Incandescence or Glow Electrical Lamps. 24,812, Crompton, and [1899] 17,510, Johnson & Murday, Electricity Meters. 25,352, Morgan, Safety Gear for Colliery Cages, &c. 25,383, Atkinson, Treatment or Purification of Sewage. 25,752, Addenbrooke, Electrometers and their Keys. 26,182, Rileys, Ash-pits for Domestic Fire-places. 26,466, Fyfe, Water-closets. 26,585, Taylor, Water Wheels. 26,692, Restell, Mops, Brushes, Scrapers, &c., for Cleaning, Painting, and other Purposes. 26,855, Wright and Lidstone, Dust and Draught Protectors for Doors, &c. 27,400, Block. Coin-freed Apparatus. [1899] 21, Mountain, Rubber for Abrading the Surface of Rubber Bricks, &c. 71, Haddan, Stoves for Warming Purposes. 172, Fawcett, Presses for Pressing Sand-faced and other Bricks. 1,264, Kirk, Trap for Gullies for Roads, Streets, Yards, and Stables. 2,152, Isles & Tempest, Combined Pile Driver and Crane. 3,819, Milner & Cavanagh, Wick-locking Devices for Oil Lamps. 5,337, Cole, Fire Grates. 7,932, Parry & Roberts, Cooking Stands or Attachments for Fire Grates. 8,676, Bostedo & Fordyce, Pneumatical Dispatch Apparatus. 9,496, Andrews, Appliance to Facilitate the Lowering of Heavy Weights. 10,183, Cuttings, Removable Combination Magnet and Coil for Electrical Generators, &c. 15,370, de Michalowsky, Secondary or Storage Battery. 15,691, Raymond, Pulverising Mill. 15,900, Bachmeyer, By-pass Cock for Self-lighting Burners. 16,306, Kugler, Supply of Fresh, Cool, or Warm and Moistened Air to Enclosed Spaces. 16,706, Houben, Bunsen Burner for Gas Stoves. 17,114, Graham, Torches or Vapour Burners for Lighting and Heating. 17,357, Smith, Logarithmical Calculating Instruments. 17,379, Hellström, Electrical Arc Lamps. 17,774, Johnson & Murday, Ammeters. 17,784, Lange, Water Motor. 17,787, McCloskey & Sculley, Wire Fencing. 17,947, Kahlson, Flap Valves. 17,979, Ascoli, Nails. 18,087, Lecomte, Lamp Chimneys. 18,173, Byng & Bell, Telephone Systems. 18,254, Polzin, Electrical Accumulator Plates. 18,326, Bachner, Receptacles for Collecting Household Refuse, &c. 18,502, Von Kramer, Safety Devices for Electrically Operated Hoisting Apparatus. 18,517, Nesemann, Windows. 18,835, Gebler, Apparatus for Use in Breaking-up Roads and Other Surfaces. 18,903, Kennedy, Automatical Fire-extinguishing Apparatus. 18,959, Household & Ardley, Traps for Closets, Urinals, Lavatory Basins, Ventilation Pipes, &c. 18,993, Schmucker, Sweet, & Ross-Lewin, Rock Drills. 19,219, Dean, Outdoor and Other Seats. 19,295, Evans & Hawksworth, Seats for Assistants in Shops and Similar Establishments. 19,345, Adolfsson, Generation of Acetylene Gas. 19,407, Moran, Waterworks Systems. 19,411, Ives, Treatment of Sewage, &c. 19,607, Savery, Facing Brick. 19,669, Postlethwaite, Compound for Cleansing Painted, Varnished, or Polished Surfaces. 19,697, North, Guard for Circular Saws. 19,706, Jones, Embossing or Engraving Glass. 19,757, Hilgenstock, Coke Ovens.

ABSTRACTS OF PATENTED INVENTIONS.

15,508.—Treatment of Sewage and Trade Effluents: *J. Thomas & S. Charlesworth.*—For removing matters in suspension from sewage and trade effluents before the liquid is filtered into adjacent streams, a settling plant is devised whereby as the sewage flows along a channel, a floating skimmer diverts the floating matter into a side pass, whilst partitions direct the solids to the bottom of the channel, whence they fall into a chamber, and are removed by the perforated buckets of an elevator. The liquid flows over an adjustable door that also serves to separate the suspended matter and guide it into the chamber.

15,510.—Sand for Founders' Use: *T. Robinson.*—Sand that has been used already, loam, and so on, are mixed with sawdust coated with clay, which causes the particles of sand to cohere, whilst the sawdust obviates the need to add coal dust. The sawdust is coated by mixing it with wetted clay or stirring it in water holding clay in suspension.

15,512.—Blow-pipes for Brazing, Welding, and Heating: *W. M. Jackson.*—For producing a circular flame a set of copper tubes are joined together and kept in position by means of discs or cover-plates. They are further surrounded with a water-jacket and protected with an asbestos covering. An injector (after the kind specified in No. 10,554, of 1893) feeds an admixture of compressed gases into the supply pipe.

15,542.—Protection of Pipes and Traps from Frost: *J. Archibald.*—For outdoor or underground pipes a wooden casing is adopted; for an indoor pipe the casing is made of thin metal, a packing of ground cork, sawdust, and flock being used.

15,619.—Sand for Moulds, &c.: *J. Hargreaves & A. Poulson.*—With the sand is mixed a compound of hydrates of silica or alumina, silicate of alumina, or silicates or aluminates of alkaline earths; and for smooth castings may be added small quantities of bituminous or carbonaceous material, such as tar, coal, pitch, &c.

15,643.—Submarine Tunnels: *C. & R. Paulitschky.*—Tubular sections, closed at their ends, are sunk into place upon a submarine causeway having a level cemented bed, and fitted together, inner and outer linings of masonry are then made, and the tube is covered with rock, &c., so that it may become imbedded in the causeway or embankment. For entrances into the tunnel are constructed gradients through cuttings, or from an embankment carried seawards and having openings for the passing of ships.

15,665.—Ball and Socket Pipe Joints: *J. Shaw.*—The two parts of the union or ball and socket joint have a cupped portion and a ball nipple, respectively, coupling flanges, and a soft metal ring—these parts may be of stamped or rough cast metal, the pipes are screwed into the two parts and not necessarily in alignment.

15,670.—Sash Fastenings: *A. G. Tonks & J. Burn.*—The lever is made in two pieces, the upper one of brass, and the lower one of iron, the former piece is turned down over the edges of the latter so as to cover a gap which carries friction rollers that bear against the customary spring.

15,732.—Water-feed Control for Acetylene Generators: *H. Spanier.*—With a toothed wheel upon the cut-off valve in the water-feed pipe is geared a rack-bar to which is joined the bell of the holder, thus the valve becomes more or less closed, or opened, as the bell rises or falls, the water-feed pipe leads into a rotating conical plug having six ports in order that it may be connected with either one of two pipes leading to either one of two carbide containers; as the supply of carbide in the container in use becomes exhausted the bell falls, and together with it falls the rack-bar, whose lower pawl engages with a ratchet-wheel upon the end of the plug, which is thereby moved one-sixth of a whole revolution, so that the water is turned into the other container and the first container can thereupon be cleaned and re-charged.

15,757.—Valves for Closets, Urinals, &c.: *H. M. Williams.*—The appliance is devised to supply a large stream at low pressure or a smaller stream at a higher pressure. It comprises two valves that may be opened by a handle, and are pressed against their seats by either a spring or the pressure of the water. When the front valve is opened a small stream flows through the outlet, and when the spindle that guides the spindle of that valve is pressed inwards a more copious stream ensues. For urinals a cam, moved by a chain and lever by the pressure of the foot upon the platform, operates the valves, and its surface is arranged to effect no more than a momentary maximum flow, as only the smaller valve remains open during the greater part of the time that the platform is pressed down.

15,762.—Gulley Traps: *A. Jowett.*—Within the central well, surrounded with a channel, is suspended the dirt-box, hanging by means of its flange. The outlet from the channel being trapped, the hopper, hanging from its flange, acts also as a trap by dipping into the dirt-box. The contrivance is intended to serve for gulleys of the ordinary form if the latter are fitted with flanges for carrying the hopper and box.

15,808.—Tipping Tanks: *A. Burgin.*—A tank is suspended inside a casing by means of rods from a pivotted lever, which bears upon the inlet valve's stem; a link joins the second lever to the first, and the tank is tilted by means of a rod joined to a third lever and the pull of the chain. The supply valve is opened by the rising of its stem through the action of a weight upon the first and second levers as the water discharges; it is again closed by the weight of water in the tank acting upon its stem; another weight, rolling upon the second lever, accelerates the action, and an obstruction plate prevents splash of water.

15,901.—Polishing Marble, Wood, Metal, &c.: *J. Pollock.*—For applying the varnish or polish is used a spraying device which is worked by revolving brushes, or compressed air, or felt rollers, the coated surfaces are next polished or rubbed with felt pads and rubbers, or brushes and ground glass, &c., wetted with water or oil; in one shape an adjustable throw crank gives a reciprocating movement to rubbers laid upon the panels, in another—for mouldings, irregular shapes, and small flat surfaces—a disc and a roller covered with felt, brushes, &c., are employed.

15,960.—Building Tubes for Columns, Walls, Arches, Culverts, &c.: *E. E. Van Wie & J. J. Jacob.*—Tubes made of terra-cotta, glass, metal, artificial stone, and so on, are fashioned with slots cut lengthwise along about half of their lengths and with grooves extending from the slots to the ends of the tubes; the slotted ends are tapered, in order to fit in to the non-slotted expanded ends of the tubes next adjacent, and the grooved portions are adapted to slide in the slots of the adjacent tubes.

15,989.—An Aid in Teaching Model Drawing: *W. Barrodale.*—On the edges of an aperture in a plate made of stout material are marked a series of equal divisions, and corresponding equal divisions are set out along the edges of a second plate that slides in a groove formed by bending over the edges of the first-named plate. Upon observing a model through the opening the division marks can be utilised for determining the model's apparent dimensions and the vanishing angles, whilst the apparent proportions of its small parts may be similarly observed by means of the sliding plate.

16,016.—A Sash Fastener and a Window Ventilator: *W. Stephens.*—Between the top of the opened upper sash and the window frame is inserted a light frame of metal covered with wire gauze or a perforated metallic sheet. When the sash is closed a ventilator is used, consisting of inner and outer perforated plates, which communicate through holes in the wood. Within the inner plate is another perforated plate, which slides over the holes. The sash fastener comprises a pin screwed at its end, and mounted upon an angle-plate, which is screwed on to the lower sash's top bar. The pin is screwed into holes in plates on the upper sash's side bars, whereby the upper sash is retained at any height desired.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 30.—By Fred. Telford (at Carlisle).

Orton, Cumberland.—The Baldwinholme Estate, 239 a. 1 r. 1 p., f.	£5,200

November 2.—By Hall, Wateridge, and Owen (at Wem).

Wem, Salop.—The Ednaston Hall Estate, 226 a. 2 r. 35 p., f.	8,810
67, 69, and 71, New-st., f.	480
34 and 36, Noble-st., and cottage adjoining, f.	610
Black Abbey and Tilley Piece enclosures, 5 a. 3 r. 7 p., f.	430

By George Loveit & Son (at Birmingham).

Kenilworth, Warwick.—Crackley Hall, and 10 a. 2 r. 33 p., f.	6,500

November 6.—By Beard & Son.

Paddington.—35 and 47, Fernhead-rd., u.t. 64 yrs., g.r. 18*l.*, r. 100*l.*	995
Northwood, Middx.—Green-lane, two plots of building land, f.	880
Mundesley-on-Sea, Norfolk.—Sea View-rd., a corner plot of land, f.	100

By Ogden, Sons, & Olley.

Tottenham.—1 to 8, Cranbrook-rd., u.t. 80 yrs., g.r. 24*l.*	835
Addlestone, Surrey.—Newhaw-rd., three freehold cottages and 1 a. 0 r. 7 p.	400

By Wea therall & Green.

Kilburn.—180, Loveridge-rd., u.t. 78 yrs., g.r. 7*l.* 10s., r. 33*l.*	310

By David J. Chattell.

Battersea.—Lavender-rd., f.g.r.'s 96*l.* 8s., reversions varying from 26 to 43 yrs. (in lots)	3,725
Mitcham, Surrey.—Love-lane, a parcel of land, 2 a. 3 r. 10 p., f.	850
Sandy-lane, a plot of market garden ground, 0 a. 1 r. 31 p., f.	160
Western-rd., a corner house and 0 a. 0 r. 25 p., f.	400
Merton.—1 to 5, Bank-buildings, f.	960
Lambeth.—15, 17, 19, and 21, Oakley-st., and 11, Coral-st., f., r. 185*l.* 10s.	2,810
Oakley-st., f.g.r. 36*l.*, reversion in 9¾ yrs.	1,610

November 7.—By F. Dod & Co.

Leytonstone.—315 to 319 (odd), Leytonstone-rd., u.t. 79 yrs., g.r. 24*l.*, r. 129*l.* 16s.	1,220
Stamford Hill.—46, West Bank, u.t. 84 yrs., g.r. 8*l.*, e.r. 50*l.*	575
Old Ford.—70, Milton-rd., f.	355

By E. H. Henry and Hampton & Sons.

Balham.—1 and 3, Balham Hill and 3 a., f., r. 405*l.*	8,500

By E. H. Henry.

Brixton.—23 and 25, Knowle-rd., u.t. 63 yrs., g.r. 5*l.* 10s.	705
Forest Hill.—23, Wynell-rd., u.t. 63 yrs., g.r. 7*l.* 10s., r. 30*l.*	295

By Ernest Owers.

Richmond.—41 to 47 (odd), Pagoda-av., u.t. 95 yrs., g.r. 28*l.* 16s., r. 144*l.*	1,225
Wembley, Middlesex.—1, Stanley Villas, f., r. 40*l.*	385

By Millar, Son, & Co.

Cavendish-sq.—1 and 3, Wigmore-st., u.t. 10½ yrs., g.r. 120*l.*, r. 350*l.*	1,810
Walthamstow.—1 to 11 (odd), Church-passage, f., r. 88*l.*	1,100
Chapel End, two freehold cottages	200
Canonbury.—65, St. Paul's-rd., u.t. 36 yrs., g.r. 6*l.* 10s., r. 48*l.*	110
Holloway.—Seven Sisters-rd., f.g.r. 7*l.* 7s., reversion in 64 yrs.	220

By Rogers, Chapman, & Thomas.

Pimlico.—36, Claverton-st., u.t. 33 yrs., g.r. 10*l.*, e.r. 70*l.*	550

By Farebrother, Ellis, & Co. (at Salisbury).

Fordingbridge, Hants.—Burgate Farm, 216 a. 2r. 30 p., f.	7,500
Five freehold cottages, and 1 a. 3 r. 22 p.	435
Water Meadows and three cottages, area 4 a. 1 r. 29 p, f.	295
"The Forester's Arms" b.-h., and 3 a. 2 r. 38 p., f.	975

By Hepper & Sons (at Leeds).

Leeds.—10, 12, and 14, Darnall-ter., f., r. 45*l.*	715
2, 4, and 6, Orfeur-st.; 2 and 4, Church Cross-st., and 5, 7, and 9, Barstow-st., f.	1,090
8 to 14 (even), Barstow-st.; 6 and 8, Church Cross-st.; 5 to 11 (odd), Douglas-st., f.	1,330

By J. Plumer Chapman (at Lewes).

Southover, Sussex.—Buntings Brooks Land, 4 a. 0 r. 20 p., f.	500

November 8.—By Joshua Baker & Son.

Cricklewood.—Melrose-av., a freehold building site	205

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Dunoon, East Bay Improvement Scheme	Burgh of Dunoon	100*l.*; 50*l.*; and 25*l.*	Jan. 31

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Additions to Nos. 3, 4, & 5, Queen-st. Bridlington Quay, Yorks.	C. J. Yardley	J. Earnshaw, Archt. Wellington-road, Bridlington Quay	Nov. 21
Road Materials	Woodbridge R.D.C.	J. R. Davison, C.E. Council Offices	do.
Store Building at General Valuation Office, Dublin	Office of Public Works	H. Williams, Public Works Office, Dublin	do.
Street Improvements, Queen-street	Wolverhampton Corp.	J. W. Bradley, Boro Surv. Town Hall	do.
Foundations, &c. to Rail Shed, Pendleton	Salford Corp.	Boro Engr. Town Hall	do.
Additions to National Schools, Sedbergh	Managers	J. Hutton, Archt. Kendal	do.
Additions to House, Bondgate, Bishop Auckland	S. Moore	W. Perkins, Archt. Victoria-st. Bishop Auckland	do.
Chimney Shaft, 200 ft. high	Blackpool Corp.	R. C. Quinn, C.E. Municipal Offices	do.
Alterations to Railway Station, Blackpool	L. & Y. & L. & N.W. Rys.	H. Sheimerdine, Archt. Hunt's Bank, Manchester	Nov. 22
Forty-eight Cottages, Rathfarnham and Clondalkan	South Dublin R.D.C.	T. Phelan, Board Room, James-st. Dublin	do.
Road Works, Fenton-road, &c.	Blackpool Corp.	J. Wolstenholme, Boro Engr. Town Hall	do.
Pavilion at Sanatorium, Hylton-road	Sunderland Corp.	Boro Engr. Town Hall	do.
Business Premises, Broad-st. Bristol	E. Everard	H. Williams, Archt. 24, Clare-st. Bristol	do.
*Supply and Delivery of Portland Cement	Hackney Vestry	S. Scorgie, Town Hall, Hackney, S.E.	do.
*Renewing Roofs and Skylights	Woolwich Union	J. O. Cook, Eleanor-road, Woolwich	Nov. 23
Sewering and Paving Back Milton-st.	Eccles (Lancs.) Corp.	A. C. Turley, C.E. Town Hall	do.
Granite Setts	do.	do.	do.
Extension of School, Haggate, near Burnley	———	S. Keighley, Archt. 25, Nicholas-st. Burnley	do.
Bridge over Lea Brook, near Cheddleton	Cheadle R.D.C.	W. P. Inskip, Surv. Queen-st. Cheadle	do.
*Erection of New Entrance Gates, &c.	W. Ham Burial Bd.	M. Russell, 43, Broadway, Stratford, E.	Nov. 24
*Construction of a Culvert	Wood Green U.D.C.	C. J. Gunyon, Town Hall, Wood Green	do.
Hospital	Skipton R.D.C.	G. E. Bolshaw, Archt. 189, Lord-st. Southport	do.
Well Sinking, Ballydowd, Lucan, Ireland	Celbridge R.D.C.	F. Shortt, The Workhouse, Celbridge	do.
Sewer Pipes, Fire Bricks, &c. Dublin	G. N. Ry. Co. (Ireland)	T. Morrison, Amiens St. Terminus, Dublin	Nov. 25
Steel Rails and Fishplates	Glasgow Corp.	J. Young, 88, Renfield-st. Glasgow	do.
Landing Stages, &c. Trossachs	do.	J. M. Gale, Engr. 45, John-st. Glasgow	do.
Additions, &c. to School, Barry	Glamorgan C.C.	T. M. Franklen, Westgate-st. Cardiff	do.
Additions to School	Bodmin Sch. Bd.	W. J. Jenkins, Arch. Bodmin	do.
Well Sinking	Burnham-on-Crouch U.D.C.	L. Dilliway, Council Offices, Burnham	do.
Road Works, Camp-road	Colchester T.C.	H. Goodyear, Boro Surv. Town Hall	do.
Gasworks' Buildings, Greenbank	Blackburn Corp.	S. R. Ogden, Engs. Municipal Offices	do.
Additions to School, North Canongate	Edinburgh Sch. Bd.	R. Wilson, Archt. 3, Queen-st. Edinburgh	do.
Villas, Elgin, N.B.	———	C. C. Doig, Archt. Elgin	do.
Store and Two Houses, Great Houghton, Yorks.	Barnsley British Co-op. Soc.	A. B. Linford, Archt. Carlton Villa, Wombwell, Barnsley	do.
Additions to Grammar School, Cirencester	———	Waller & Son, Archt. 17, College Green, Gloucester	Nov. 27
Gas Main (1¼ miles)	Aylesbury U.D.C.	J. H. Bradford, Surv. 2, Rickford's-hill, Aylesbury	Nov. 28
Synagogue, Brynmawr, Wales	———	I. Isaacs, Bailey-st. Brynmawr	do.
*Cleaning, &c. Two Glazed Partitions	Hornsey U.D. Sch. Bd.	Stanley Hodson, Sch. Bd. Offices, Highgate, N.	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Kerbing and Tarpaving Beecroft-rd. Brockley	Lewisham B. of W.	Surv.'s Dept. Town Hall, Catford, S.E.	Nov. 28
*Kerbing and Tarpaving Brockley-rd. (part of)	do.	do.	do.
*Kerbing and Tarpaving Hilly Fields Crescent	do.	do.	do.
*Making-up Streets	Cnty. Boro. of W. Ham	J. G. Morley, Town Hall, W. Ham, E.	do.
Boundary Wall, Gates, &c. at Cemetery	Yardley Burial Bd.	W. H. Lloyd, Archt. 38, Bennett's Hill, Birmingham	Nov. 29
Extending and Widening Promenade	Blackpool Corp.	J. Wolstenholme, C.E. Town Hall	do.
Steel Girder Bridges, Castle-rd.	Kidderminster T.C.	A. Comber, Boro. Engr. Town Hall, Kidderminster	do.
Additions to School, Durham-rd.	Gateshead Sch. Bd.	Oliver, Leeson, & Wood, Archt. Mosley-st. Newcastle	do.
*Provide and Fix Fire Hydrants	St. Mary, Islington	W. Smith, 65, Chancery-lane, W.C.	Nov. 30
Reservoir, Talla	Edinburgh Water Trustees	J. Wilson, C.E. 72a, George-st. Edinburgh	do.
School, Gedney Drove End, Lincs.	Gedney Sch. Bd.	R. H. H. Hand, Archt. Spalding	do.
Public Hall, &c. Dyson-rd. Halifax	Pellon Ward Liberal Club Co. Ltd.	Walsh & Nicholas, Archt. L. & Y. Bank Chambers, Halifax	do.
*Erection of Vagrant Wards, &c.	Alresford Un.	The Workhouse, Alresford	Dec. 1
Pavilion, St. Lawrence, Canterbury	Kent County Cricket Club	W. J. Jennings, Archt. 4, St. Margaret-st. Canterbury	Dec. 2
Pumping Station, Reservoir, &c. East Kirkby, Notts.	Kirkby-in-Ashfield U.D.C.	W. H. Radford, C.E. Angel-row, Nottingham	do.
*Erection of School	Horsham Sch. Bd.	W. Buck, North-street, Horsham	Dec. 4
*Construction of Certain Works of Sewerage	Hendon U.D.C.	S.S. Grinsley, Public Offices, The Burroughs, Hendon, N.W.	do.
*Isolation Hospital Extensions	City of Norwich	A. E. Collins, Guildhall, Norwich	Dec. 5
School, &c. Upland	Bexley Sch. Bd.	J. Ladds, 7, Doughty-st. Mecklenburgh-sq. W.C.	do.
*Erection of Police Station	County of I. of Wight	F. Newman, 8t. Thomas-st. Ryde, I. of Wight	do.
Sewerage Works, Bare	Morecambe U.D.C.	Beesley, Son, & Nichols, 11, Victoria-st. Westminster, S.W.	Dec. 6
*Erection of Operating Room	Cardiff Infirmary	E. Seward, Infirmary, Cardiff	do.
Schools and Hall, Carrickfergus, Ireland	———	S. P. Close, Archt. Donegall-sq. Buildings, Belfast	Dec. 7
Sewerage Works	Cheltenham Corp.	Boro. Surv. Municipal Offices	Dec. 9
Cottage Home School, Wavertree, nr. Liverpool	———	E. Kirby, 5, Cook-st. Liverpool	Dec. 11
*Construction of Reservoir	Llanelly U.D.C.	J. H. Baines, 30, G. George-st. Westminster	Jan. 2
Hospital Buildings	Swindon & District Hospital Bd.	Halliday & Rodger, Archt. 14, High-st. Cardiff	Jan. 6
Hotel, Military-rd. Colchester	Charrington, Nicholl & Co.	J. W. Start, Archt. Colchester	No date
Seven Houses, Beckenham	———	Norfolk & Prior, Archt. 4, Station-buildings, Catford Bridge	do.
Reservoir, Hindhead, Surrey	Wey Valley Water Co.	A. O. Pain, Engr. 17, Victoria-st. S.W.	do.
Shops and Warehouses, Sunbridge-rd. Bradford	———	Empsall & Clarkson, Archt. 7, Exchange, Bradford	do.
Farmhouse, Hareston, Brixton, Devon	———	D. Ward, 7, Courtenay-st. Plymouth	do.
*Purchase of Old Buildings	Addey & Stanhope Sch.	W. R. Kersey, 12, High-st. Deptford, S.E.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Assistant	Wallasey U.D.	100*l.* per annum	Nov. 22
*Clerk of Works	Boro. of Leicester	———	Nov. 23
*Clerk	Beckenham U.D.C.	100*l.* per annum	Nov. 24
*General Assistant	Boro. of Sutton Coldfield	35s. per week	do.
*Junior Assistant	Wimbledon U.D.C.	100*l.* per annum	Nov. 28
*Assistant	Corp. of Leicester	2*l.* 2s. per week	Dec. 2

Those marked with an asterisk (*) are advertised in this Number. ***Competitions, p.*** iv. ***Contracts, pp.*** iv. vi. viii. x. & xxi. ***Public Appointments, pp.*** xviii. xix. & xxi.

By W. H. Brown.

Kentish Town.—43, 45, and 47, Kentish Town-rd., f., r. 149*l.* £2,520

By Frank Jolly & Co.

Clapton.—17 and 19, Mandeville-st., f. 535

By Rutley, Son, and Vine.

Hampstead-rd.—16, Tolmers-sq., u.t. 61 yrs., g.r. 10*l.*, r. 65*l.* 665

By Victor Vaughan.

Kentish Town.—18, Warden-rd., u.t. 51¼ yrs., g.r. 6*l.*, r. 52*l.* 500

65 and 69, Carlton-rd., u.t. 51¼ yrs., g.r. 10*l.* 8s., r. 64*l.* 670

By T. G. Wharton.

Bowes-pk.—3 to 11 (odd), Myddleton-rd., u.t. 96 yrs., g.r. 35*l.* 10s., r. 154*l.* 1,450

November 10.—By Dolman and Pearce.

Haverstock Hill.—No. 99, area ¾ acre, u.t. 65 yrs., g.r. 48*l.* 10s. 3,045

1 to 5, Wychcombe Studios, u.t. 65 yrs., g.r. 2*l.*, e.r. 300*l.* 2,300

5, England's-lane, u.t. 65 yrs., g.r. 2*l.*, r. 80*l.* .. 950

Haddenham, Bucks.—Townside, two cottages, and 3 r., c. 200

Holborn.—17, Red Lion-passage, f. 690

By Aldridge, Douglas, & Co.

Peckham.—30 and 32, Forest Hill-rd., u.t. 64 yrs., g.r. 14*l.*, r. 105*l.* 1,425

By Mullett, Booker, & Co.

Hyde Park.—4 and 5, Hyde Park-ter., and 13 and 14, Albion Mews East, u.t. 22½ yrs., g.r. 70*l.*, r. 590*l.* 4,300

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent yd. for yard, &c.

TO CORRESPONDENTS.

E. & C., G. F. L. G., and R. & W. (Amounts should have been stated).

NOTE.—The responsibility of signed articles, letters, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

AMESBURY (Wilts).—For additions, &c., to the workhouse, for the Union Guardians. Messrs. John Harding & Son, architects, 58, High-street, Salisbury:—

Wort & Way	£1,551 0 0	E. Hale	£1,350 0 0
Vincent & Foland	1,395 0 0	W. Q. Cole, Amesbury*	1,255 2 8

BEDFORD.—For alterations and additions to the Queen's Engineering Works, for Messrs. W. H. Allen, Son & Co. Mr. George P. Allen, architect, 3, New Inn, Strand:—

S. Foster	£434 10	Coleman	£431 10

[Architect's estimate ..... £445.]

BRACKNELL (Berks).—For pulling down present premises, and erecting five houses and shops, a cottage, and stabling, at High-street, Bracknell. Mr. A. E. Sidford, architect and surveyor, Wokingham, Berks:—

W. Wallis	£7,184	Bottrill & Son	£6,674
W. Watson	7,034	H. Charman	6,380
McCarthy E. Fitt	6,897	G. Brown	6,180
Patman & Fotheringham	6,891	J. B. Seward	5,933
		W. J. May, Bracknell*	5,781

CAMBERLEY (Surrey).—For the execution of sewerage work, Frimley-road, for the Urban District Council. Mr. W. J. Hodgson, surveyor, High-street, Camberley:—

Free & Son	£650 0 0	T. Turner, Blackwater*	£624 6 3
G. Swaker	630 0 0		

DEAL.—For the construction of underground lavatory, &c., Beach-street, for the Urban District Council. Mr. T. C. Golder, Borough Surveyor, 23, Queen-street, Deal:—

1.—Cotten Bros., Deal*	£443 18 6
2.— „ „ *	836 11 4
1.—F. Collyer	536 17 3
1.—Doulton & Co.	610 13 5
2.— „ „	1,076 7 11
1.—Finch & Co.	707 14 3
2.— „ „	1,237 2 1

See also next page.

CANTERBURY.—For the erection of six cottages, near Sturry-road, for the Town Council. Mr. A. H. Campbell, City Surveyor, Tudor-chambers, Canterbury :—

	If built in slate.	If built in tile.
A. J. Brewster	£1,380 0	£1,350 0
Edwards	1,294 10	1,275 15
Harris Bros., Canterbury*	1,220 0	1,170 0

EAST GRINSTEAD.—For making-up Charlwood-row, &c., for the Urban District Council. Mr. R. Wilds, surveyor, Council Offices, East Grinstead. Quantities by surveyor :—

J. G. Pickard	£910	14	4
J. R. Hoster	865	10	8
H. Young	841	6	0
S. Carey	758	7	6
Kitteringham, Waltham Cross, Herts*	£657	8	3

EMSWORTH (Hants).—For the execution of paving works, &c., Station-road, for the Warblington Urban District Council. Mr. F. Swinburne, surveyor, West-street, Emsworth :—

H. Rubick	478
H. Tier	£476

ENFIELD.—For the erection of a terrace of cottage residences in Bertram-road, Enfield, for the Freehold and Leasehold Investment Company, Limited. Mr. Eugene C. Beaumont, architect, 78, Fleet-st., E.C. :—

A. H. Jones, Camberwell*	£12,140

GOSPORT AND ALVERSTOKE (Hants).—Cemetery works. For fencing, draining, and making paths in Ann's-hill-road, for the Alverstoke Burial Board. Mr. Harry A. F. Smith, architect, Star Chambers, High-street, Gosport :—

W. T. Dugan	£2,142	0	
J. Croad	2,020	0	
Middleton & Co.	1,977	10	
E. Beaton	1,813	0	
Lear & Son	£1,735		
Lane & Son	1,690		
C. M. Dash, Clarence-square, Gosport*	£1679		

GOSPORT.—For the erection of new voluntary schools at Gosport, for the Gosport and Alverstoke School Council. Mr. Harry A. F. Smith, architect, Star Chambers, Gosport. Quantities by the architect :—

W. T. Dugan	£3,250		
Middleton & Co.	3,044		
Light & Son	2,975		
Lane & Son	2,920		
J. Croad	£2,890		
C. M. Dash	2,860		
Lear & Son, Alverstoke*	2,720		

GRANTOWN (N.B.).—For the erection of a villa residence for Mr. David Stewart, Balliemoro, Nethy Bridge. Mr. James Gilbert, architect :—

Masonry.—Andrew Grant, Grantown	£351
Carpentering.—Wm. Grant, Nethy Bridge	322
Plumbing.—F. H. Wink, Nairn	109
Slating.—Robert Bain, Grantown	56
Plastering.—James Hay, Grantown	116

HARROW.—For the erection of manufacturing premises, for Messrs. Ingall, Parsons, Clive, & Co., Limited, of Birmingham and London. Mr. Owen P. Parsons, architect, 14, Temple-street, Birmingham :—

Colls & Son	£4,900		
Clift Ford	4,755		
A. & B. Hanson	4,556		
Thomas & Edge	4,498		
Elkington, McKeveregan & Co.	4,448		
A. E. Wilson	4,396		
Smith & Son	£4,343		
S. G. Bird	4,296		
C. Ansell	4,242		
W. H. Gibbs	4,150		
Ferris Bros.	4,122		
Wingrove & Stanley, Northampton*	3,885		

HASTINGS.—For laying fireproof floor, &c., at the Workhouse, Ore, for the Guardians. Messrs. Jeffery & Skiller, architects, 5, Havelock-road, Hastings :—

S. MacFarlane	£992	18	0
Banks Fireproof Construction Syndicate	984	12	8
W. B. Wilkinson	952	14	0
Williams & Co.	883	16	4
Peirson & Co.	880	0	0
Power, Power, & Co.	£770	0	0
C. G. Picking	700	19	3
P. Jenkins	649	0	0
J. Every, Lewes*	649	0	0

KETTERING.—For the erection of five cottages, for Mr. H. W. Wilshire. Mr. Walter Brand, architect, 16, Bishop-street, Leicester :—

Freeman & Son	£1,500
W. J. Payne	1,485
Pettifee & Broadberry, Kettering*	1,250
Smith & Knight	£1,189

LEICESTER.—For the erection of new wholesale markets, for the Corporation of Leicester. Mr. Walter Brand, architect, 16, Bishop-street, Leicester :—

Bentley & Co.	£41,773		
H. Lovatt	38,700		
Shilitoe & Son	36,000		
Bowen & Sons	35,335		
Johnson & Son	32,839		
Herbert & Sons	£32,395		
Moss & Son	32,253		
T. Herbert, Leicester*	32,050		

LEICESTER.—For the erection of new printing works, for Messrs. W. Watts & Co. Mr. John P. Briggs, architect, Effingham House, Arundel-street, Strand, W.C. Quantities by Mr. James H. Swan, 8, Clifford's Inn, Temple Bar, E.C. :—

J. E. Johnson	£6,944		
J. Chapman	6,231		
H. Herbert	6,157		
J. O. Jewsbury	£6,149		
Thos. Herbert*	6,075		

LONDON.—For the erection of two private residences in Shepherd's Hill, Highgate, for the Freehold and Leasehold Investment Company, Limited. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. :—

H. Brown, Stoke Newington*	£5,200

LONDON.—For the rebuilding of 54, 55, and 56, St. Paul's-churchyard, City, E.C., for Messrs. Henry Jones & Co. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. Quantities by E. J. Gee :—

Kilby & Gayford	£3,577		
Lascelles & Co.	3,296		
H. Brown	2,897		
Patman & Fotheringham*	£2,831		
Edwards & Medway	2,657		

LONDON.—For the erection of four blocks of residential flats, Clapton-gardens, Clapton-square, E., for the Freehold and Leasehold Investment Company, Limited. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. Quantities by the architect :—

Matthews	£12,086		
Brown	11,790		
Patman & Fotheringham	11,471		
H. M. Dove	£11,350		
Grover*	11,342		

LONDON.—For alterations to No. 186, Edgware-road, and new shop front and fittings, for Mr. James Chambers. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. :—

Drew & Co.	£1,596		
Cadman & Son*	£1,470		

LONDON.—For the erection of fifteen dwelling-houses and shops, High-road, Chadwell Heath, for Mr. S. Leheup. Mr. Fred A. Ashton, architect, 177, Romford-road, Stratford, E. :—

W. G. Maddison	£12,157		
C. Chapman	11,947		
J. & H. Cocks, Ltd.	£11,620		
A. E. Symes*	11,350		

NEWCASTLE-ON-TYNE.—For the rebuilding of the "Percy Cottage" public-house, shop, offices, &c., Percy-street, Newcastle-on-Tyne, for Mr. John Stuart. Messrs. Pyle & Blackburn, architects, 15, Pilgrim-street, Newcastle-on-Tyne. Quantities by Mr. J. Bell, 13, Westgate-road, Newcastle :—

T. Hutchinson	£3,675	8	3
Kirk & Brown	3,461	12	8
Middlemiss Bros.	3,385	0	0
E. Weatherley	3,300	0	0
J. C. Hope	3,146	12	0
J. & W. Lowry	3,100	0	0
W. Barton	£3,062	18	0
M. W. Maughan	2,901	0	0
S. F. Davidson	2,850	0	0
C. H. Mauchlen	2,837	7	0
Do. (amended tender)*	2,822	17	0

OSWESTRY.—For re-roofing and other alterations to the Gymnasium, in Victoria-street, for the Town Council. Mr. G. William Lacey, C.E., Borough Engineer and Surveyor :—

W. H. Thomas	£582
J. Higgins, Oswestry*	£579

RIPPONDEN (Yorks).—For the supply of flags, &c., for the Soyland Urban District Council. Mr. John Wadsworth, Surveyor, Council Offices, Soyland :—

Per yd. 3-in. Flags.

	s.	d.
Marshall & Son	3	9
Thomas Wade	3	6
Normanton & Sons, Ltd., Greetland, near Halifax*	3	4

Per yd. Squaring and Laying.

Joseph Lawton	1	6
Crowther & Pellyton, Ripponden*	1	3

Kerb per Faced yd.

Joseph Lawton (re-dressing and laying)	1	0

New Kerb per Faced yd.

Joseph Lawton (re-dressing and laying)	0	6

Kerb per Faced yd.

Crowther & Pellyton, Ripponden (re-dressing and laying)*	0	11½

New Kerb.

Crowther & Pellyton, Ripponden (re-dressing and laying)*	3	5½

Per Faced yd.

Crowther & Pellyton, Ripponden (channelling, re-dressing, &c.)*	1	4

RUABON (N. Wales).—For additions to Ponkey Schools, for the Ruabon (U.D.) School Board. Messrs. J. Morison & Son, architects, King-street, Wrexham. Quantities by the architects :—

J. Gethin	£4,960		
J. Davies	4,870		
Jenkins & Jones	4,750		
J. T. Jones, Cefn, Ruabon*	£4,375		

SHOREHAM (Sussex).—For the supply of flints (550 cubic yards), for the New Shoreham Urban District Council. Mr. C. E. Butler, surveyor, New-road, Shoreham :—

Harry Bridger, Old Shoreham*, 275 yards, at 6s. per cubic yard.	
G. H. Strivens, Old Shoreham*, 275 yards, at 6s. per cubic yard.	

SWINTON (Lancs.).—For the erection of boundary wall, Victoria Park, for the Swinton and Pendlebury Urban District Council. Mr. H. Entwisle, Surveyor, Council Offices, Swinton :—

Davies & Sons, Pendlebury	£225

TOTNES (Devon).—For the erection of a cottage hospital for nine beds. Mr. Edward Richards, architect, Manor Office, Torquay. Quantities by the architect :—

J. Smerdon	£2,410	0	0
J. W. McKellar	2,396	0	0
E. P. Bovey	2,390	0	0
W. Reeves	2,389	15	6
Vanstone & Mumford	2,349	0	0
T. Brown	£2,343	0	0
W. A. Goss	2,310	0	0
S. Blatchford	2,300	0	0
R. F. Yeo	2,268	0	0
W. Smaridge	2,218	7	6
T. Brook, Totnes	2,000	0	0

WALTHAMSTOW.—For the erection of shops, Copper mill-lane, Walthamstow, for the Freehold and Leasehold Investment Company, Limited. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. :—

J. Noakes, Canning Town, E.*	£1,750

LONDON SCHOOL BOARD TENDERS.

At the last meeting of the London School Board, the Works Committee submitted the following lists of tenders. Mr. T. J. Bailey is the Board's Architect:—

ALBION-SQUARE BATHS.—Adapting for Board's use :—

Johnson & Co. + 25 per cent. on schedule	£4,176		
W. Shurmur	£4,623		
Munday & Sons	4,587		
Marchant & Hirst	4,352		
T. L. Green	4,230		
Lawrance & Sons	£4,176		
Williams & Son	4,092		
F. Bull	3,979		
Stevens Bros.	3,565		
B. E. Nightingale*	3,493		

EAST LAMBETH ("Paragon").—Electric wiring, &c. :—

	Schedule A.	Schedule B.	‡
Laing, Wharton, & Down, Ltd.	£410 0	£202 0	£1 10
Drake & Gorham	385 15	189 10	1 5
Hayward-Tyler & Co.	438 0	120 0	1 6
Woods & Co.	426 0	114 0	1 2
F. Geere Howard	375 0	157 0	1 2
Peto & Radford, Ltd.	354 0	123 0	—
J. C. Christie*	266 0	115 0	0 15

‡ This is the price per lamp, including switch and plain pendant, for additions or deductions made during the progress of the work.

GORDON HOUSE.—Cottage home for 15 girls :—

C. Wall	£3,024	0	
Johnson & Co.	2,753	0	
Johnson & Co., Ld.	2,739	0	
Lathey Bros.	2,439	0	
J. W. Brooking	2,423	0	
Speechley & Smith	£2,307	0	
E. Triggs	2,276	0	
Soole & Son, Richmond*	2,242	3	

HOMERTON COLLEGE.—Engineers' work in providing kitchen range and hot-water supplies to baths, sinks, &c., in front of building, including cutting away for and making good in connexion therewith :—

Vaughan & Brown, Limited	£378 0
Wontner-Smith, Gray, & Co.	329 10
J. & F. May	311 0
G. Davis	300 0
A. A. Morris	279 18
Defries & Sons, Limited*	239 0

Supply of the following articles, on running contracts :—Museum Cases (Nos. 1 & 2); Folding Steps; Cupboards and Tables for holding maps, diagrams, sheets, &c. :—

—	Museum Cases (No. 1).	Museum Cases (No. 2).	Folding Steps.	Map and Rack Cupboards.	Stock and Map Cupboards (Combined).	Map and Diagram Tables.
	Each.	Each.	Per doz. pairs.	Each.	Each.	Each.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
H. Bouneau	7 0 0	6 0 0	—	10 5 0	6 10 0	7 15 0
Bruce, Croom, & Co.	—	—	9 12 0	15 2 6	10 10 0	7 2 6
T. Cruwys	6 12 6*	5 5 0*	—	10 10 0	6 10 0	8 5 0
Foster, Cooper, & Foster	—	—	15 10 0	14 0 0	8 0 0	5 8 6*
J. Garvie & Sons	—	—	—	13 10 0	6 17 6	6 10 0
General Builders, Ltd.	—	—	7 16 0	—	—	—
G. M. Hammer & Co., Ltd.	8 0 0	6 2 6	—	9 5 0*	6 8 0*	6 15 0
J. H. Heathman & Co.	—	—	9 0 0	—	—	—
W. H. Lascelles & Co.	10 10 0	7 12 0	—	12 10 0	8 12 0	10 5 0
London School Furniture Co.	8 0 0	7 0 0	—	8 0 0*	5 17 6	6 17 6
Lonnie & Co.	9 0 0	7 0 0	—	—	—	—
J. H. W. Martin	7 15 0	5 17 6	—	14 15 0	8 5 0	6 9 6*
W. Martin	—	—	12 12 0	—	—	—
E. Spencer & Co.	12 5 0	8 11 6	—	19 0 0	10 5 0	10 0 0
J. E. Tuckett	—	—	7 4 0*	—	—	—
Wrinch & Sons	—	—	9 10 0	—	—	—

See also next page.

HOLBEACH-ROAD.—New School—Accommodation: boys, 266; girls, 266; infants, 266; total, 798. Graded School on three stories—Halls: boys, 55 ft. by 32 ft.; girls, 54 ft. by 31 ft.; infants, 54 ft. by 31 ft. Class-rooms: boys, 60, 60, 56, 42, and 48; girls, 60, 60, 56, 42, and 48; infants, 60, 60, 56, 40, and 50. Special rooms: Drawing Class-room, 1,050 ft. area; heating by low-pressure hot-water apparatus:—

		If walls of class-rooms and halls are plastered add—
Munday & Sons	£23,132	+ £270
Kirk and Randall	22,092	+ 275
F. & H. F. Higgs	22,043	+ 261
Holliday and Greenwood	21,723	+ 290
Martin, Wells, & Co.	21,721	+ 234
Spencer, Santo, & Co., Ltd.	21,565	+ 127
Johnson & Co., Ltd.	21,505	+ 258
L. H. & R. Roberts	21,468	+ 260
Wallis & Sons	21,195	+ 338
Lawrance & Sons	21,181	+ 280
Stimpson & Co.	20,670	+ 210
J. & M. Patrick	20,506	+ 319
S. Hart	20,372	+ 150
Treasure & Son, London and Shrewsbury*	19,945	+ 215

MONNOW-ROAD (Old School).—Providing and fixing steam boiler, super heater, and providing auxiliary heating:—

Wippell Bros. & Row	£1,250	Williams & Sons	£968
Oldroyd & Co., Limited	1,198	Wontner-Smith, Gray, & Co.	920
The Brightside Foundry and Engineering Company, Ltd.	1,175	G. & E. Bradley	910
Kite & Co.	1,100	J. & F. May	907
Strode & Co.	1,093	J. Grundy	863
		Dargue, Griffiths, & Co., Limited	854 17
		Defries & Sons, Limited*	774

PENROSE-STREET.—Improvements: Providing new halls (48 ft. by 26 ft. average), cloak-rooms, lavatories, stock-rooms, and teachers' rooms for all departments; providing two connecting corridors, one on boys' and one on girls' floor; removing three existing teachers' rooms; providing new lift, and removing and refixing glazed partition in boys' and girls' departments, and extending girls' playground on top of building, and other works. Existing accommodation: Boys, 406; girls, 406; infants, 565; total, 1,377. Revised accommodation: boys, 390; girls, 390; infants, 479; total, 1,259:—

Bulled & Co.	£6,963	J. Appleby	£5,836
Garrett & Son	6,950	J. & C. Bowyer	5,628
E. Triggs	6,200	W. Downs	5,545
J. Marsland	6,045	Smith & Sons, Ltd.*	5,513
C. Cox	5,899		

PONTON-ROAD. — Adapting class-rooms on the ground floor (infants' department) for a visitors' daily centre, including new water-closet and lavatory accommodation in connexion therewith:—

J. Marsland	£755	W. Hammond	£646
G. Barker	669 15	Lathey Bros.	642
H. & G. Mallett	659	Garrett & Son	635
J. Smith & Sons, Ltd.	647	Rice & Son	624
		Maxwell Bros., Ltd.*	592

ROLLS-ROAD.—Heating:—

J. Esson	£295	Wippell Bros. & Row	£160
Dougill & Co., Ltd.	226	Truswell & Son	145 10
Stevens & Sons	185	Bates & Sons*	113
Seward & Co.	178		
Wenham & Waters, Ltd.	160		

ROMAN-ROAD.—Reconstructing boiler flue:—

J. T. Robey	£350	Gibb & Co.	£185
J. F. Holliday	316	Rockhill Bros.	166 12
G. Barker	225	B. E. Nightingale*	140

SIDNEY-ROAD.—Reconstructing boiler flue:—

Grover & Son	£180	J. Haydon	£80
Silk & Son	177	B. E. Nightingale	80
Rockhill Bros.	112 10	Stevens Bros.*	79

WESTMINSTER (St. George's-row).—Cleaning windows:—

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King & Scarborough	—	—	43 2 10
Ell & Co.	—	35 16 5	—
Buck & Hickman	12 6 5	—	—
Clark, Hunt, & Co.‡	11 0 6	—	—
Stephens & Carter	—	31 11 5	—
Ingram, Perkins, & Co.	—	—	37 15 6

‡ This quotation is subject to any advance in market prices after January 1, 1900.

*** Accept tender of Clark, Hunt, & Co., for articles in Schedule A (buckets, &c.); Stephens & Carter, for articles in Schedule B (ladders, &c.); and Ingram, Perkins, & Co., for articles in Schedule C (scaffold boards, &c.).

* Recommended for acceptance.

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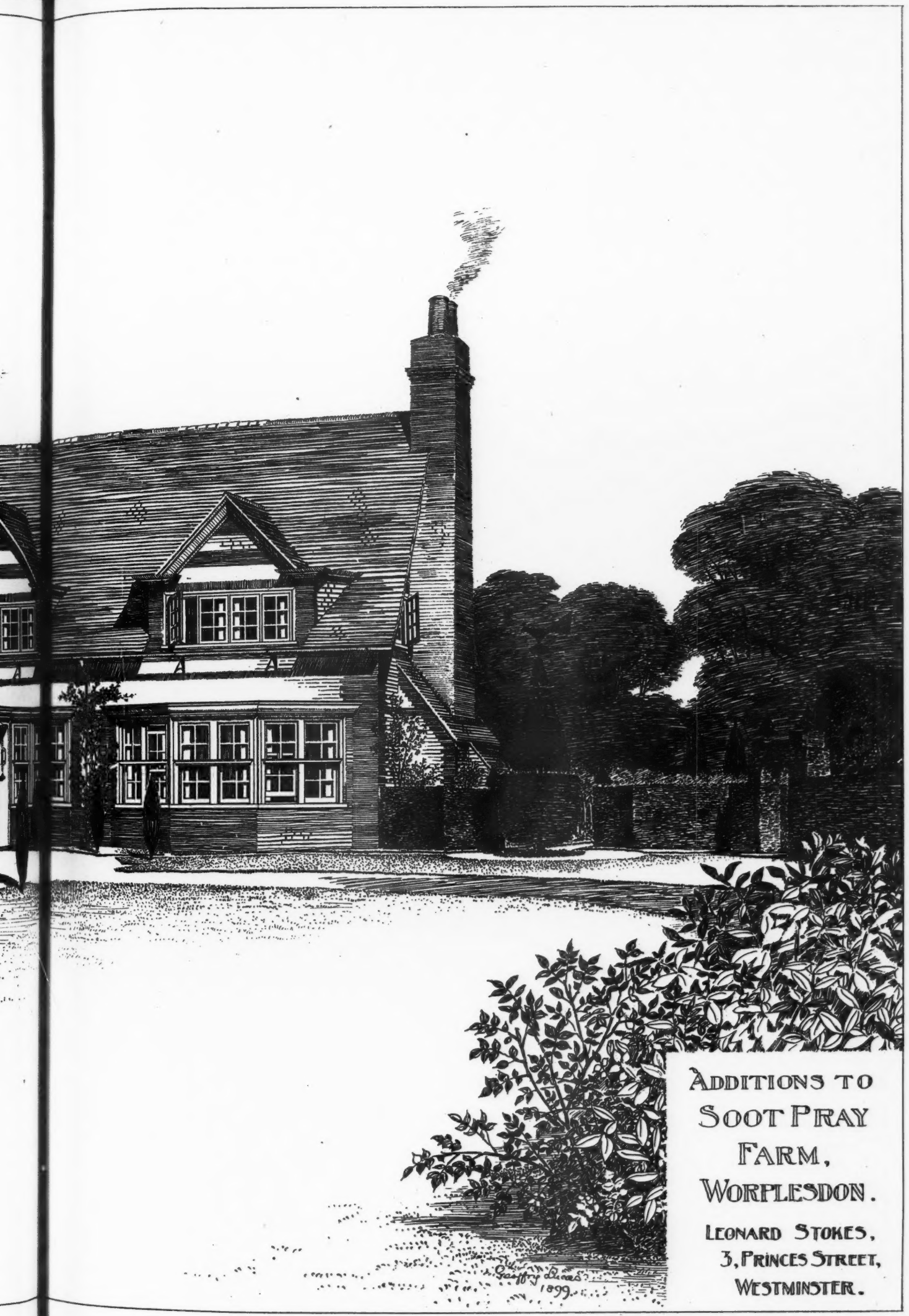

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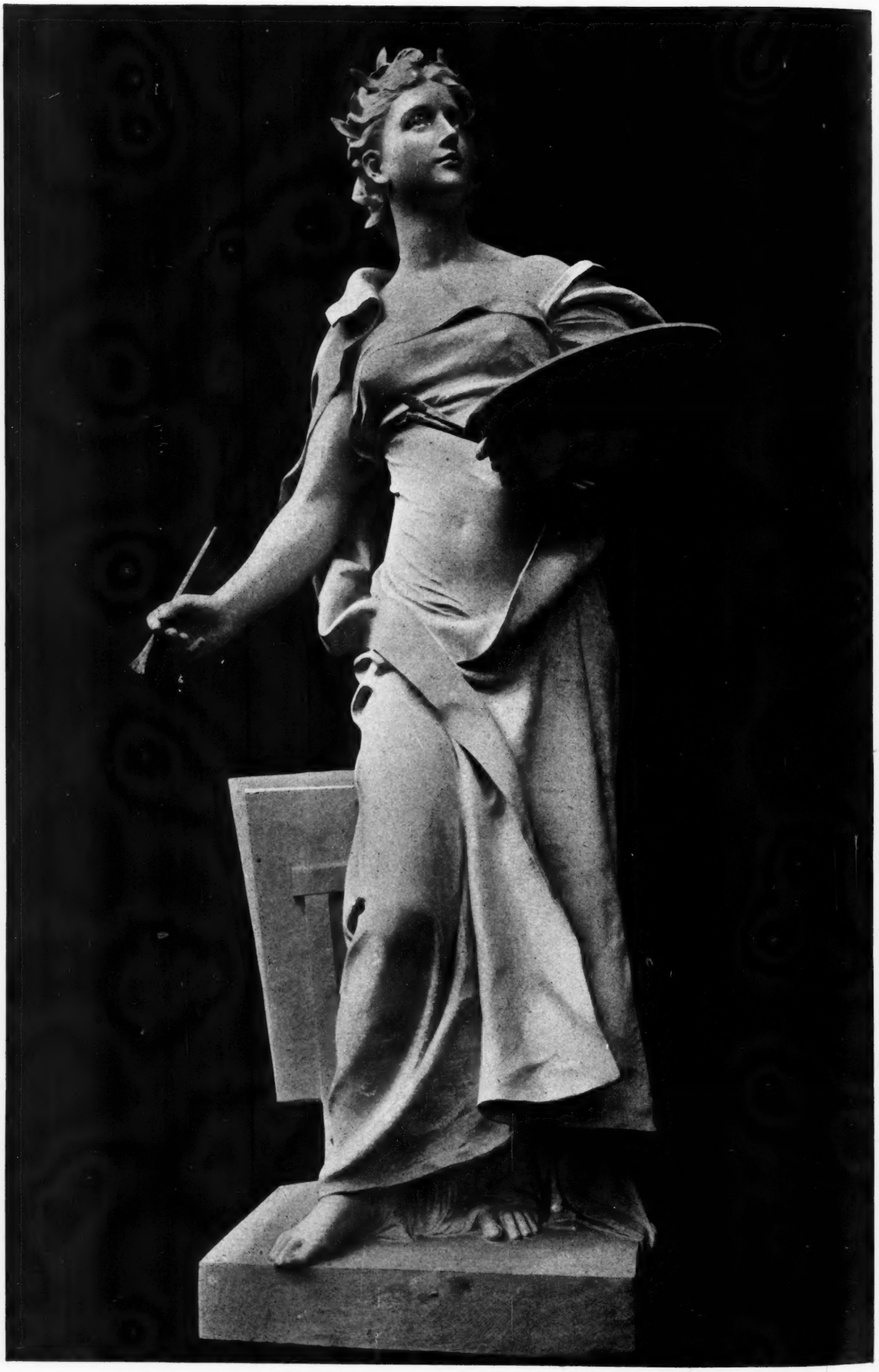

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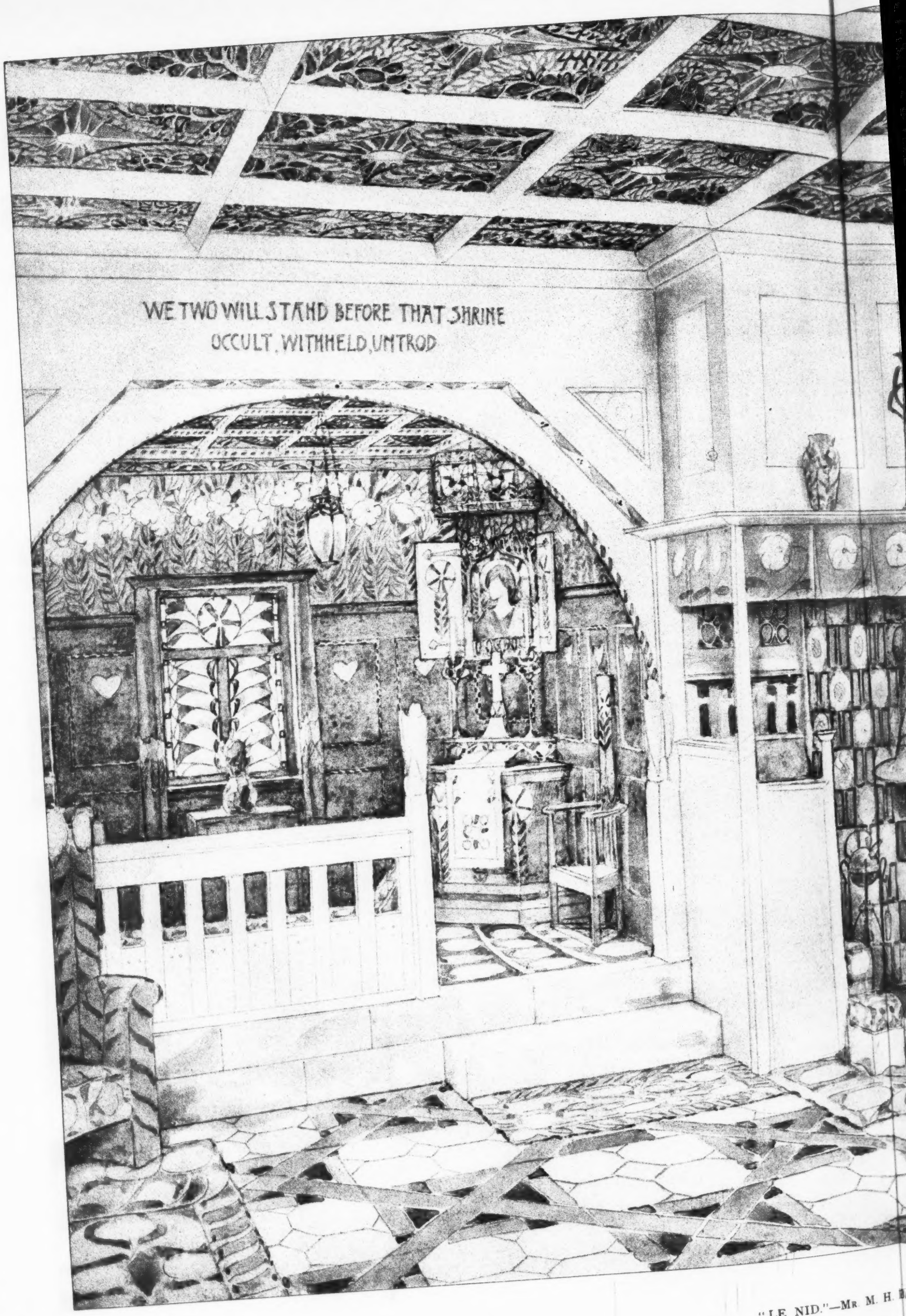
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